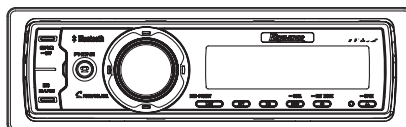


Service Manual



DEH-P790BT/XN/UC

ORDER NO.
CRT3903

CD RECEIVER

DEH-P790BT /XN/UC

DEH-P7900BT /XN/UC

DEH-P8950BT /XN/ES

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3195	CRT3815	S10.5COMP2	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly



For details, refer to "Important Check Points for Good Servicing".

SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

● Safety Precautions for those who Service this Unit.

When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

1. During repair or tests, minimum distance of 13 cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replaced only with the same or equivalent type recommended by the manufacture.
Discard used batteries according to the manufacture's instructions.

● Service Precaution



1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.
6. When diagnosing a product, take care of its heated portion.
Holder (CND3133)
Bluetooth Unit



[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SPECIFICATIONS

● DEH-P790BT/XN/UC

General

Power source	14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	5 mA or less
Dimensions (W × H × D):	
DIN	
Chassis	178 × 50 × 165 mm (7 × 2 × 6-1/2 in.)
Nose	188 × 58 × 16 mm (7-3/8 × 2-1/4 × 5/8 in.)
D	
Chassis	178 × 50 × 165 mm (7 × 2 × 6-1/2 in.)
Nose	170 × 45 × 16 mm (6-3/4 × 1-3/4 × 5/8 in.)
Weight	1.68 kg (3.7 lbs)

Audio

Maximum power output	50 W × 4 50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output ...	22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance	4 Ω to 8 Ω × 4 4 Ω to 8 Ω × 2 + 2 Ω × 1
Preout max output level/output impedance	4 V/100Ω
Equalizer (7-Band Graphic Equalizer):	
Frequency	50/125/315/800/2k/5k/12.5k Hz
Gain	±12 dB
Loudness contour:	
Low	+3.5 dB (100 Hz), +3 dB (10 kHz)
Mid	+10 dB (100 Hz), +6.5 dB (10 kHz)
High	+11 dB (100 Hz), +11 dB (10 kHz) (volume: -30 dB)
HPF:	
Frequency	50/63/80/100/125 Hz
Slope	-12 dB/oct
Subwoofer (mono):	
Frequency	50/63/80/100/125 Hz
Slope	-18 dB/oct
Gain	+6 dB to -24 dB
Phase	Normal/Reverse
Bass boost:	
Gain	+12 dB to 0 dB

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format:	
Sampling frequency	44.1 kHz
Number of quantization bits	16; linear
Frequency characteristics ...	5 Hz to 20 000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IHF-A network)
Dynamic range	92 dB (1 kHz)
Number of channels	2 (stereo)
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver. 7, 7.1, 8, 9, 10 (2ch audio) (Windows Media Player)
AAC decoding format	MPEG-4 AAC (iTunes® encoded only)
WAV signal format	Linear PCM & MS ADPCM

FM tuner

Frequency range	87.9 MHz to 107.9 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio	75 dB (IHF-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response	30 Hz to 15 000 Hz (±3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range	530 kHz to 1 710 kHz (10 kHz)
Usable sensitivity	18 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IHF-A network)

Bluetooth

Version	Bluetooth 1.2 certified
---------------	-------------------------



Specifications and the design are subject to possible modifications without notice due to improvements. ■

● DEH-P7900BT/XN/UC

General

A	Power source	14.4 V DC (10.8 V to 15.1 V allowable)
	Grounding system	Negative type
	Max. current consumption	10.0 A
	Backup current	5 mA or less
B	Dimensions (W × H × D):	
	DIN	
	Chassis	178 × 50 × 165 mm (7 × 2 × 6-1/2 in.)
	Nose	188 × 58 × 16 mm (7-3/8 × 2-1/4 × 5/8 in.)
B	D	
	Chassis	178 × 50 × 165 mm (7 × 2 × 6-1/2 in.)
	Nose	170 × 45 × 16 mm (6-3/4 × 1-3/4 × 5/8 in.)
	Weight	1.68 kg (3.7 lbs)

Audio

C	Maximum power output	50 W × 4 50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
	Continuous power output ...	22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
D	Load impedance	4 Ω to 8 Ω × 4 4 Ω to 8 Ω × 2 + 2 Ω × 1
	Preout max output level/output impedance	4 V/100Ω
D	Equalizer (7-Band Graphic Equalizer):	
	Frequency	50/125/315/800/2k/5k/12.5k Hz
	Gain	±12 dB
E	Loudness contour:	
	Low	+3.5 dB (100 Hz), +3 dB (10 kHz)
E	Mid	+10 dB (100 Hz), +6.5 dB (10 kHz)
	High	+11 dB (100 Hz), +11 dB (10 kHz) (volume: -30 dB)
E	HPF:	
	Frequency	50/63/80/100/125 Hz
	Slope	-12 dB/oct
F	Subwoofer (mono):	
	Frequency	50/63/80/100/125 Hz
	Slope	-18 dB/oct
	Gain	+6 dB to -24 dB
	Phase	Normal/Reverse
F	Bass boost:	
	Gain	+12 dB to 0 dB

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format:	
Sampling frequency	44.1 kHz
Number of quantization bits	16; linear
Frequency characteristics ...	5 Hz to 20 000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IHF-A network)
Dynamic range	92 dB (1 kHz)
Number of channels	2 (stereo)
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver. 7, 7.1, 8, 9, 10 (2ch audio) (Windows Media Player)
AAC decoding format	MPEG-4 AAC (iTunes® encoded only)
WAV signal format	Linear PCM & MS ADPCM

FM tuner

Frequency range	87.9 MHz to 107.9 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio	75 dB (IHF-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response	30 Hz to 15 000 Hz (±3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range	530 kHz to 1 710 kHz (10 kHz)
Usable sensitivity	18 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IHF-A network)

Bluetooth

Version	Bluetooth 1.2 certified
---------------	-------------------------



Note

Specifications and the design are subject to possible modifications without notice due to improvements. ■

● DEH-P8950BT/XN/ES

General

Power source	14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	5 mA or less
Dimensions (W × H × D):	
DIN	
Chassis	178 × 50 × 165 mm
Nose	188 × 58 × 16 mm
D	
Chassis	178 × 50 × 165 mm
Nose	170 × 45 × 16 mm
Weight	1.68 kg

Audio

Maximum power output	50 W × 4 50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output ...	22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance	4 Ω to 8 Ω × 4 4 Ω to 8 Ω × 2 + 2 Ω × 1
Preout max output level/output impedance	4 V/100 Ω
Equalizer (7-Band Graphic Equalizer):	
Frequency	50/125/315/800/2k/5k/12.5k Hz
Gain	±12 dB
Loudness contour:	
Low	+3.5 dB (100 Hz), +3 dB (10 kHz)
Mid	+10 dB (100 Hz), +6.5 dB (10 kHz)
High	+11 dB (100 Hz), +11 dB (10 kHz) (volume: -30 dB)
HPF:	
Frequency	50/63/80/100/125 Hz
Slope	-12 dB/oct
Subwoofer (mono):	
Frequency	50/63/80/100/125 Hz
Slope	-18 dB/oct
Gain	+6 dB to -24 dB
Phase	Normal/Reverse
Bass boost:	
Gain	+12 dB to 0 dB

CD player

System	Compact disc audio system
Usable discs	Compact disc

Signal format:

Sampling frequency	44.1 kHz
Number of quantization bits	16; linear
Frequency characteristics ...	5 Hz to 20 000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IEC-A network)
Dynamic range	92 dB (1 kHz)
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MP3 decoding format	MPEG-1 & 2 Audio Layer 3
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AAC decoding format	MPEG-4 AAC (iTunes® encoded only)
WAV signal format	Linear PCM & MS ADPCM

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Frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio	75 dB (IEC-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response	30 Hz to 15 000 Hz (±3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range	531 kHz to 1 602 kHz (9 kHz) 530 kHz to 1 640 kHz (10 kHz)
Usable sensitivity	18 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

Bluetooth

Version	Bluetooth 1.2 certified
Output power	+4 dBm Max. (Power class 2)

Infrared remote control

Wavelength	940 nm ±50 nm
Output	typ; 12 mw/sr per Infrared LED



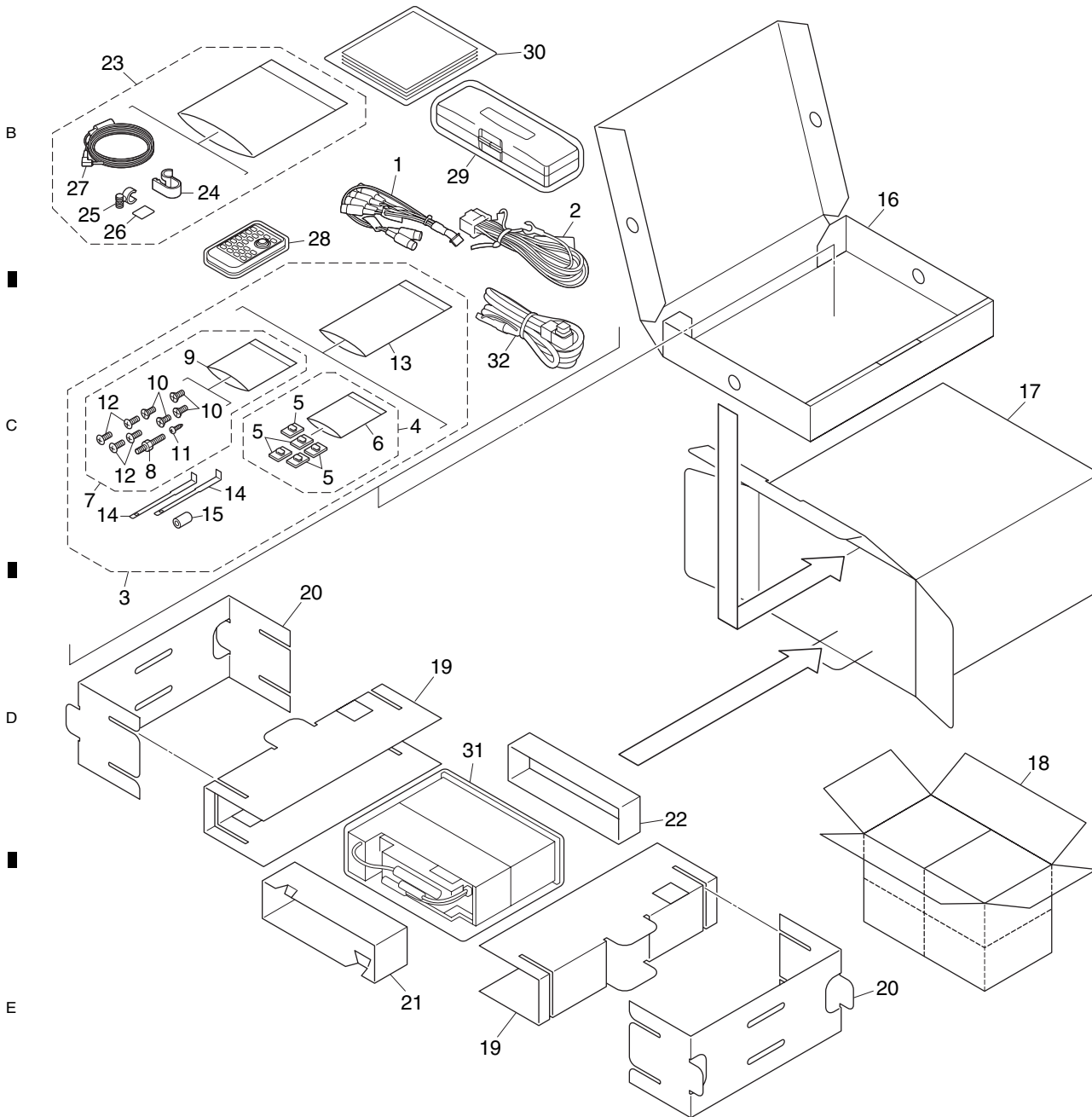
Note

Specifications and the design are subject to possible modifications without notice due to improvements. ■

2. EXPLODED VIEWS AND PARTS LIST

NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.
• The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
• Screw adjacent to ▽ mark on the product are used for disassembly.
• For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING(DEH-P790BT/XN/UC)



<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	Cord Assy	CDE8284	
2	Cord Assy	CDP1009	
* 3	Accessory Assy	CEA7537	A
4	Cord Clamper Assy	CEA4636	
* 5	Clamper	CNV8262	
* 6	Polyethylene Bag	E36-615	
7	Screw Assy	CEA5322	
8	Screw	CBA1650	
* 9	Polyethylene Bag	CEG-127	
10	Screw	CRZ50P090FTC	
11	Screw	JPZ20P060FTB	B
12	Screw	TRZ50P080FTC	
* 13	Polyethylene Bag	CEG1160	
14	Handle	CND3707	
15	Bush	CNV3930	
16	Sub Unit Box	CHG5195	
17	Unit Box	CHG6114	
18	Contain Box	CHL6114	
19	Protector	CHP2797	
20	Protector	CHP2798	C
21	Protector	CHP2812	
22	Protector	CHP3333	
23	Microphone Assy	CPM1064	
24	Clip Holder	CZN5471	
25	Microphone Holder	CZN5472	
26	Cushion	CZN5473	
* 27	Microphone	CZX5059	
28	Remote Control Unit	CXC7555	
29	Case Assy	XXA7417	
30-1	Owner's Manual (English, French)	CRD4204	D
30-2	Installation Manual (English, French)	CRD4209	
30-3	Caution Card	CRP1310	
* 30-4	Warranty Card	CRY1070	
* 30-5	Caution Card	XRP7002	
30-6	Polyethylene Bag	CEG1116	
* 30-7	Caution Card	CRP1359	E
31	Polyethylene Bag	CEG1368	
32	Cord Assy	XDP7005	

1 2 3 4

2.2 PACKING(DEH-P7900/BT/XN/UC, DEH-P8950BT/XN/ES)

A

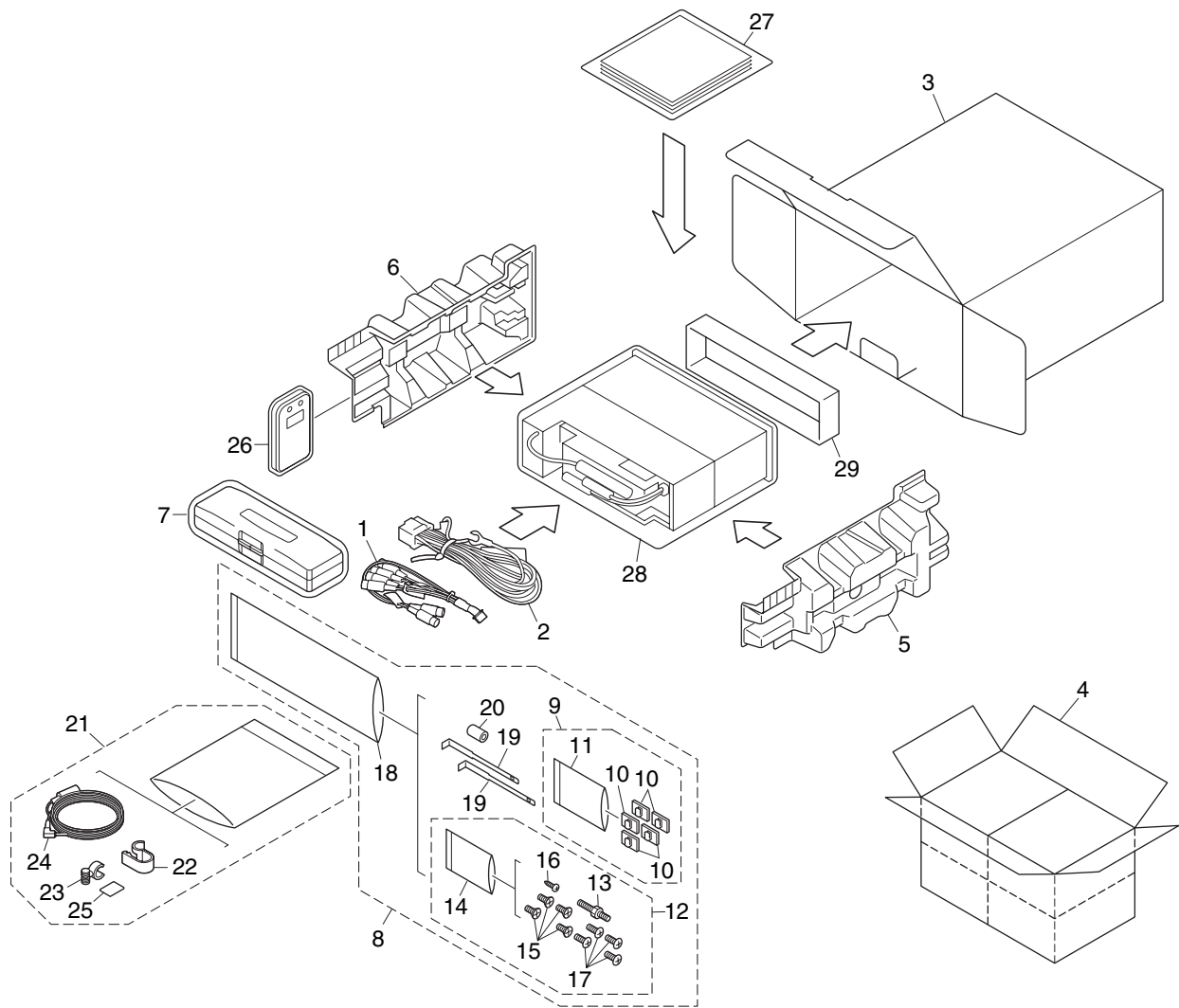
B

C

D

E

F



(1) PACKING(DEH-P7900BT/XN/UC, DEH-P8950BT/XN/ES) SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Cord Assy	CDE8284	19	Handle	CND3707
2	Cord Assy	CDP1009	20	Bush	CNV3930
3	Unit box	See Contrast table(2)			
4	Contain box	See Contrast table(2)	21	Microphone Assy	CPM1064
5	Protector L	CHP3373	22	Clip Holder	CZN5471
			23	Microphone Holder	CZN5472
6	Protector R	CHP3374	* 24	Microphone	CZX5059
7	Case Assy	XXA7417	25	Cushion	CZN5473
* 8	Accessory Assy	See Contrast table(2)			
9	Cord Clamper Assy	CEA4636	26	Remote Control Unit	CXC7555
* 10	Clamper	CNV8262	27-1	Owner's manual	See Contrast table(2)
			27-2	Owner's Manual	See Contrast table(2)
* 11	Polyethylene Bag	E36-615	27-3	Installation Manual	See Contrast table(2)
12	Screw Assy	See Contrast table(2)	27-4	Caution Card	CRP1310
13	Screw	CBA1650			
* 14	Polyethylene Bag	CEG-127	* 27-5	Warranty Card	See Contrast table(2)
15	Screw	CRZ50P090FTC	* 27-6	Caution Card	XRP7002
			27-7	Polyethylene Bag	CEG1116
16	Screw	See Contrast table(2)	* 27-8	Caution Card	See Contrast table(2)
17	Screw	TRZ50P080FTC	28	Polyethylene Bag	See Contrast table(2)
* 18	Polyethylene Bag	CEG1160	29	Protector	CHP3375

(2) CONTRAST TABLE

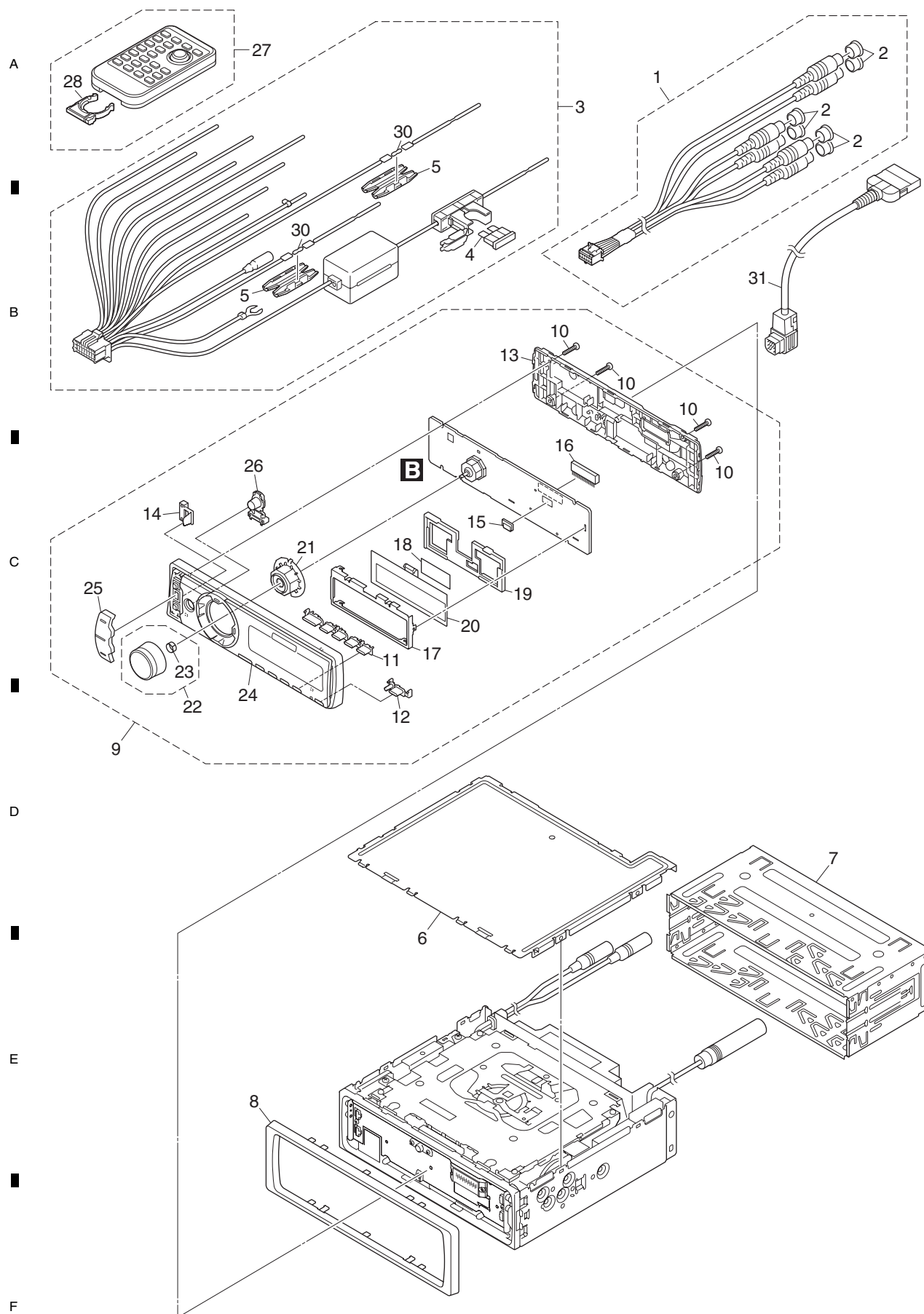
DEH-P7900BT/XN/UC and DEH-P8950BT/XN/ES are constructed the same except for the following:

Mark	No.	Description	DEH-P7900BT/XN/UC	DEH-P8950BT/XN/ES
*	3	Unit box	CHG6111	CHG6110
	4	Contain box	CHL6111	CHL6110
	8	Accessory Assy	CEA7537	CEA7536
	12	Screw Assy	CEA5322	CEA3849
	16	Screw	JPZ20P060FTB	Not used
	27-1	Owner's Manual	CRD4205	CRD4206
	27-2	Owner's Manual	Not used	CRD4207
	27-3	Installation Manual	CRD4210	CRD4211
	27-5	Warranty Card	CRY1246	Not used
	27-8	Caution Card	CRP1358	Not used
	28	Polyethylene Bag	CEG1173	CEG-162

Owner's Manual, Installation Manual

Part No.	Language
CRD4205	English, French
CRD4206	English, Spanish, Portuguese(B)
CRD4207	Arabic, Traditional Chinese
CRD4210	English, French
CRD4211	English, Spanish, Portuguese(B), Arabic, Traditional Chinese

2.3 EXTERIOR(1)



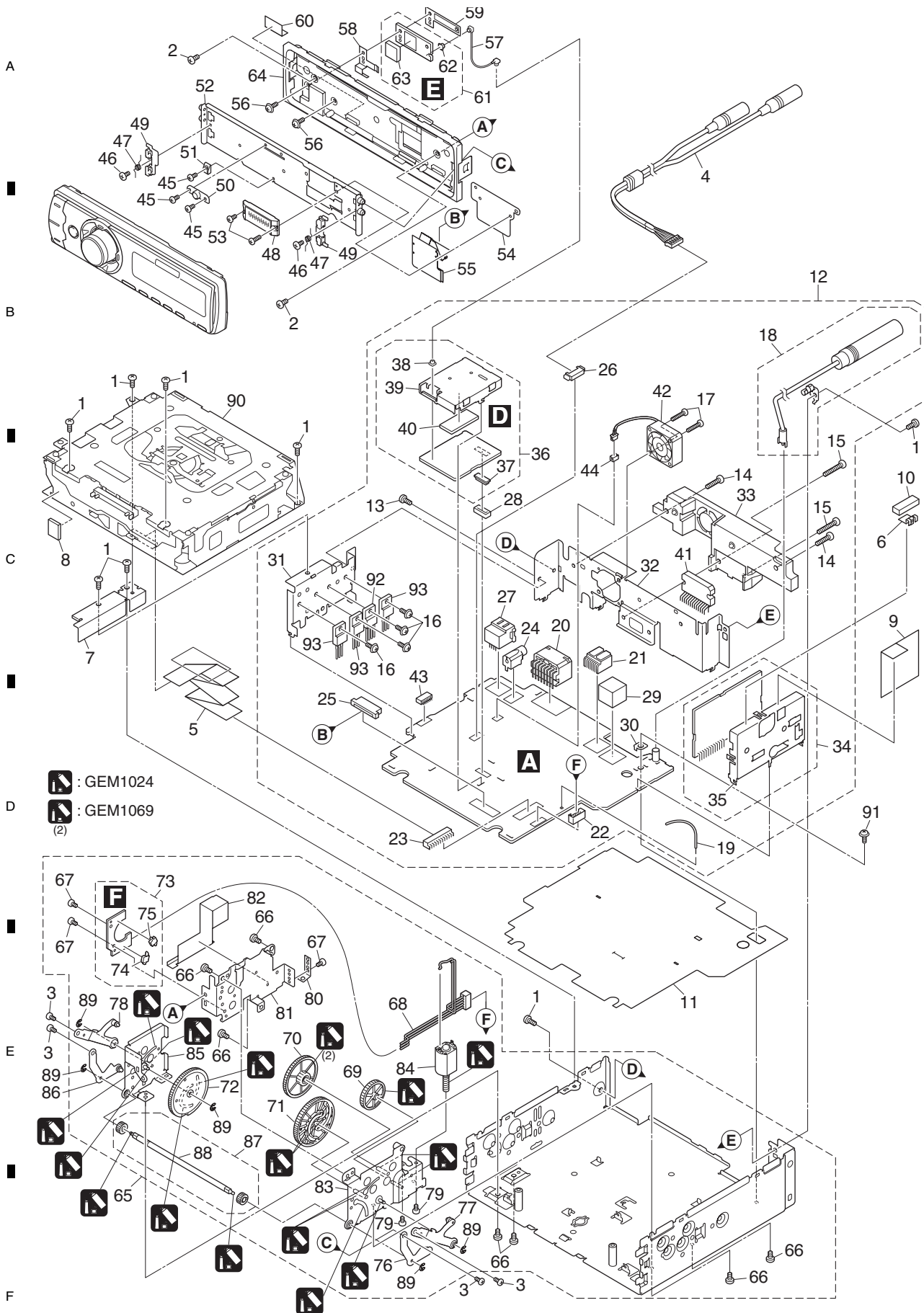
	5		6		7		8	
(1) EXTERIOR(1) SECTION PARTS LIST								
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.	
	1	Cord Assy	CDE8284	17	Holder		CND3781	
	2	Cap	CNV6727	18	Double Sided Tape		CNM8673	A
	3	Cord Assy	CDP1009	19	Holder		CNV9435	
⚠	4	Fuse(10 A)	CEK1136	20	OEL Unit		MXS8260	
	5	Cap	CNS1472					
	6	Case	CNB3447	21	Holder		CNV9676	
	7	Holder	CND3598	22	Knob Unit		CXC7271	
	8	Panel	See Contrast table(2)	23	Spring		XBL7005	
	9	Detach Grille Assy	See Contrast table(2)	24	Sub Grille Assy		See Contrast table(2)	
	10	Screw	BPZ20P080FTB	25	Button Unit(SRC/BAND)		CXC7558	
	11	Button(LIST/ATT/EQ/DISP/CLOCK)CAI1154		26	Button Unit(PHONE)		CXC7559	
	12	Button(EJECT)	CAI1155	27	Remote Control Unit		CXC7555	B
	13	Cover	CNS8491	28	Cover		CZN5357	
	14	Lighting Conductor	CNV9509	29	•••••			
	15	Connector(CN1961)	CKS5545	30	Resistor		RS1/2PMF102J	
	16	Connector(CN1801)	CKS5662	31	Cord Assy		See Contrast table(2)	

(2) CONTRAST TABLE

DEH-P790BT/XN/UC, DEH-P7900BT/XN/UC and DEH-P8950BT/XN/ES are constructed the same except for the following:

Mark	No.	Description	DEH-P790BT/XN/UC	DEH-P7900BT/XN/UC	DEH-P8950BT/XN/ES
	8	Panel	CNS8914	CNS8915	CNS8915
	9	Detach Grille Assy	CXC7496	CXC7495	CXC7497
	24	Sub Grille Assy	CXC7501	CXC7500	CXC7502
	31	Cord Assy	XDP7005	Not Used	Not Used

2.4 EXTERIOR(2)



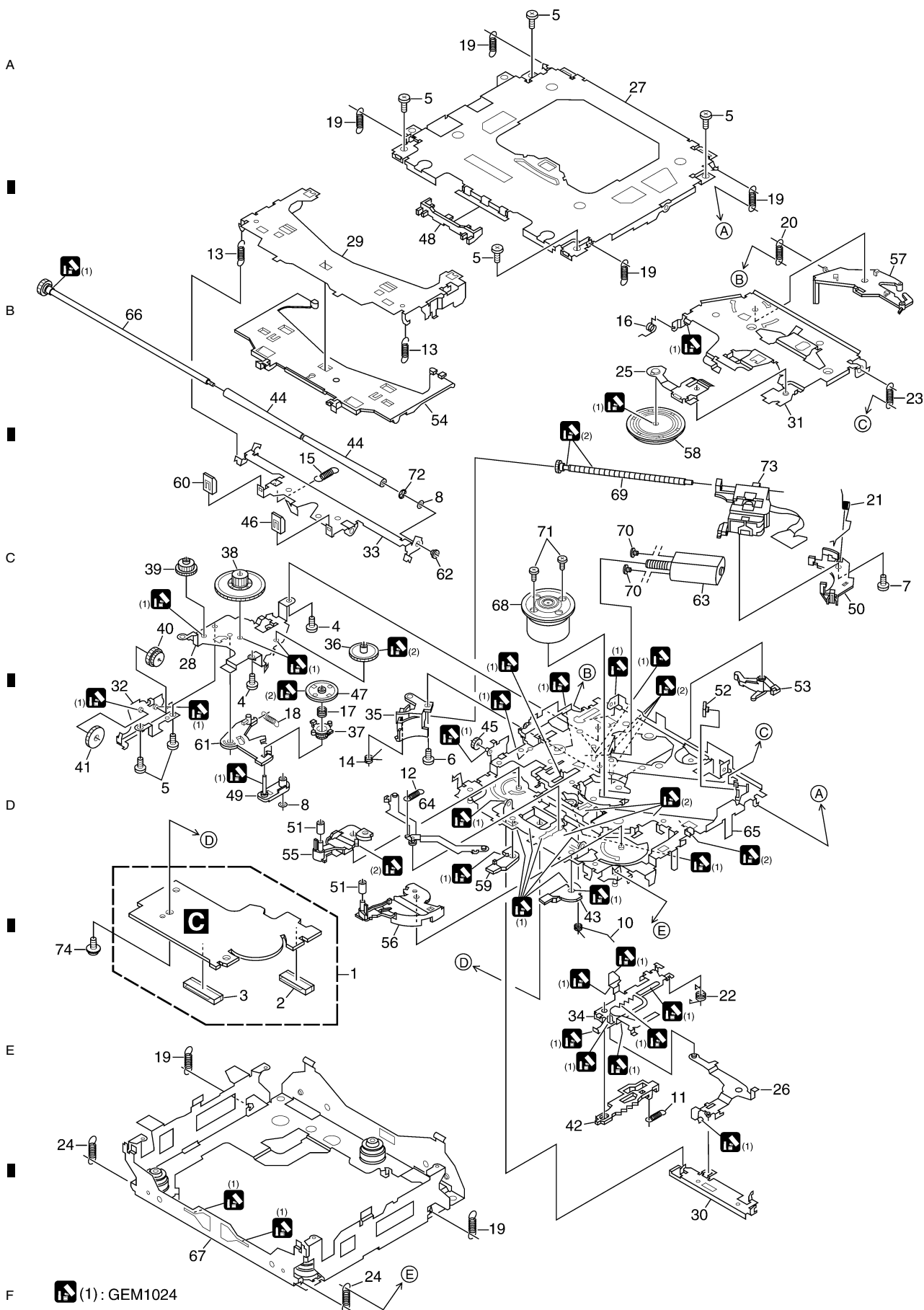
Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Screw	BSZ26P060FTC	48	Connector	CKS5273	
2	Screw(M2.6 x 4)	CBA1828	49	Arm	CNV6962	
3	Screw(M2 x 2.5)	CBA1924	50	Guide	CNV6967	A
4	Cord Assy	CDE8051				
5	Cable	CDE8388	51	Guide	CNV8048	
			52	Case Unit	CXC5695	
6	Earth Plate	CND2171	53	Screw(M2 x 3.5)	XBA7002	
7	Holder	CND3606	54	Holder	XNC7019	
8	Insulator	CNM7682	55	Flexible PCB	XNP7026	
9	Insulator	CNM8790				
10	Cushion	CNM9126	56	Screw(M2 x 3.5)	CBA2030	
			57	Cord Assy	CDE8474	
11	Insulator	CNM9936	58	Earth Plate	CND3138	
12	Tuner Amp Unit	See Contrast table(2)	59	Holder	CND3139	
13	Screw	BMZ26P040FTC	60	Insulator	CNN1499	B
14	Screw	BMZ26P100FTC				
15	Screw	BMZ26P180FTC	61	Antenna Unit	CWN2634	
			62	Connector(ANT1102)	CKS5749	
16	Screw	BSZ26P060FTC	63	BT Antenna(ANT1101)	CWX3132	
17	Screw(M2.6 x 14)	CBA1632	64	Panel Unit	See Contrast table(2)	
18	Antenna Cable(CN401)	CDH1336	65	Drive Unit	CXC8074	
19	Clamper	CEF1050				
20	Plug(CN981)	CKM1278	66	Screw	BMZ26P040FTC	
			67	Screw(M2 x 2)	CBA1871	
21	Connector(CN301)	CKM1389	68	Cord	CDE7392	
22	Plug(CN881)	CKS-786	69	Gear	CNV7752	
23	Connector(CN701)	CKS3829	70	Gear	CNV7753	C
24	Connector(CN151)	See Contrast table(2)				
25	Connector(CN801)	CKS4811	71	Gear	CNV7754	
			72	Gear	CNV7755	
26	Connector(CN181)	CKS4980	73	Switch Unit	CWS1389	
27	Connector(CN101)	CKS5271	74	Switch	CSN1051	
28	Connector(CN521)	CKS5321	75	Spring Switch	CSN1052	
29	Connector(CN561)	CKS5683				
30	Holder(CN983)	CNC5399	76	Arm Unit	CXC2199	
			77	Arm Unit	CXC6623	
31	Holder	CND3133	78	Arm Unit	CXC6624	
32	Holder	See Contrast table(2)	79	Screw	JFZ20P020FTC	
33	Heat Sink	CNR1904	80	Spring	XBL7003	D
34	FM/AM Tuner Unit	CWE1952				
35	Holder	CND1054	81	Holder	XNC7017	
			82	Insulator	XNM7119	
36	Bluetooth Unit	CWN2339	83	Holder Unit	XXA7399	
37	Connector(CN76)	CKS5320	84	Motor Unit	XXA7400	
38	Connector(CN1)	CKS5749	85	Holder Unit	XXA7401	
39	Shield	CND3134				
40	Sheet	CNM9598	86	Arm Unit	XXA7403	
			87	Gear Unit	XXA7424	
41	IC(IC351)	PAL007C	88	Shaft	XLA7001	
42	Fan Motor	CXM1288	89	Washer	YE15FTC	
43	7P FFC Connector (CN522)	VKN1299	90	CD Mechanism Module(S10.5)	CXK5763	
44	ZH Connector 2P (CN891)	VKN1928				E
45	Screw(M2 x 2)	CBA1871	91	Screw	ISS26P055FTC	
			92	IC(IC911)	NJM2388F84	
46	Screw(M2 x 2)	CBA1935	93	Transistor(Q453,Q751,Q901)	2SD2396	
47	Spring	CBH2530				

(2) CONTRAST TABLE

DEH-P790BT/XN/UC, DEH-P7900BT/XN/UC and DEH-P8950BT/XN/ES are constructed the same except for the following:

Mark	No.	Description	DEH-P790BT/XN/UC	DEH-P7900BT/XN/UC	DEH-P8950BT/XN/ES
	12	Tuner Amp Unit	CWN2343	CWN2343	CWN2344
	24	Connector(CN151)	CKS4124	CKS4124	Not used
	32	Holder	CND3834	CND3834	CND3835
	64	Panel Unit	CXC6608	CXC5696	CXC5696

2.5 CD MECHANISM MODULE



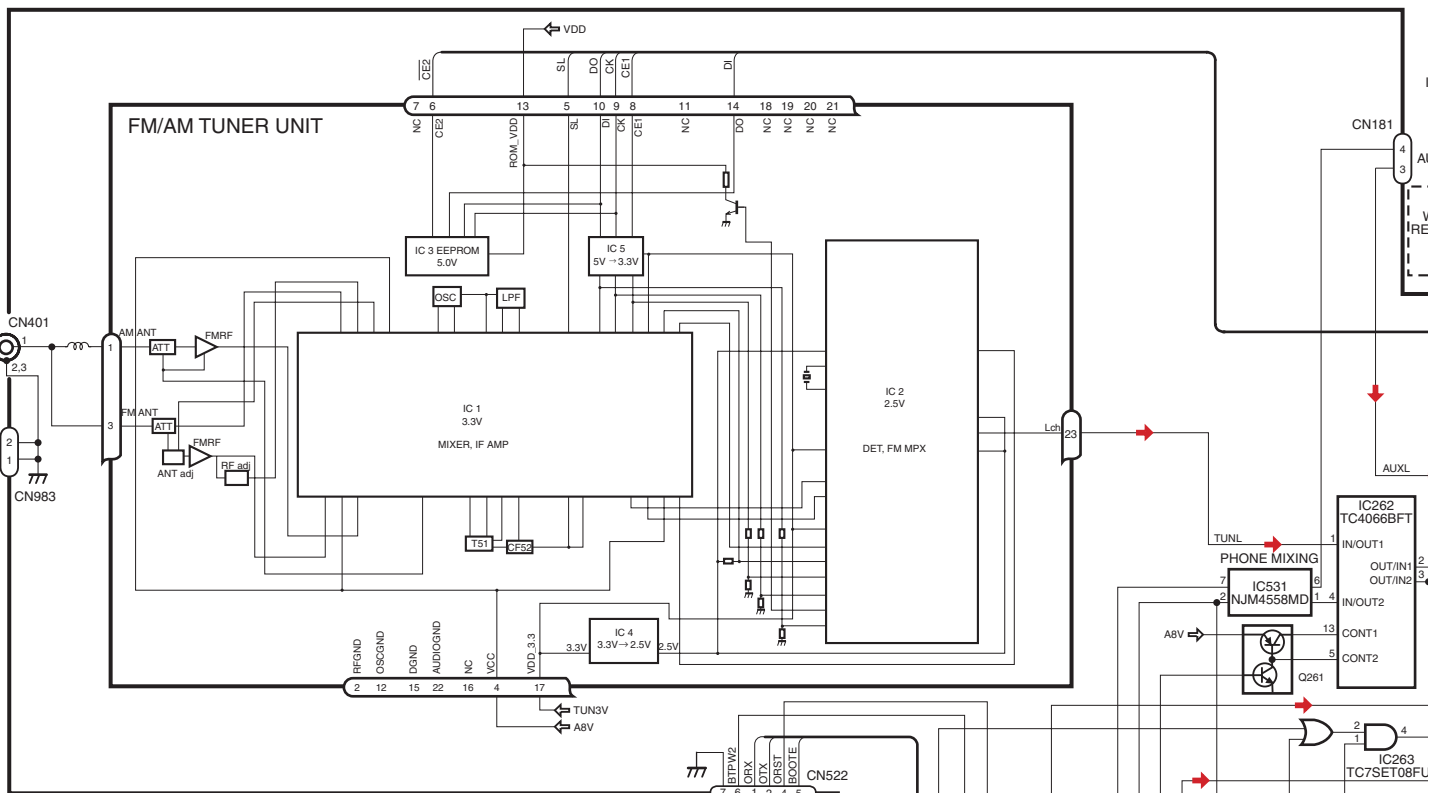
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	CD Core Unit(S10.5COMP2)	CWX3514	50	Rack	CNV8342	
2	Connector(CN101)	CKS4182				
3	Connector(CN701)	CKS4808	51	Roller	CNV8343	A
4	Screw	BMZ20P025FTC	52	Holder	CNV8344	
5	Screw	BSZ20P040FTC	53	Arm	CNV8345	
			54	Guide	CNV8347	
6	Screw(M2 x 3)	CBA1511	55	Arm	CNV8348	
7	Screw(M2 x 4)	CBA1835				
8	Washer	CBF1038	56	Arm	CNV8349	
9		57	Arm	CNV8350	
10	Spring	CBH2609	58	Clamper	CNV8365	
			59	Arm	CNV8386	
11	Spring	CBH2612	60	Guide	CNV8396	B
12	Spring	CBH2614				
13	Spring	CBH2616	61	Arm	CNV8413	
14	Spring	CBH2617	62	Collar	CNV8938	
15	Spring	CBH2620	63	Motor Unit(M2)	CXC4026	
			64	Arm Unit	CXC4027	
16	Spring	CBH2855	65	Chassis Unit	CXC4028	
17	Spring	CBH2937				
18	Spring	CBH2735	66	Gear Unit	CXC4029	
19	Spring	CBH2854	67	Frame Unit	CXC4031	
20	Spring	CBH2642	68	Motor Unit(M1)	CXC7134	
			69	Screw Unit	CXC6359	C
21	Spring	CBH2856	70	Screw	JFZ20P020FTC	
22	Spring	CBH2857				
23	Spring	CBH2860	71	Screw	JGZ17P022FTC	
24	Spring	CBH2861	72	Washer	YE20FTC	
25	Spring	CBL1686	73	Pickup Unit(P10.5)(Service)	CXX1942	
			74	Screw	IMS26P030FTC	
26	Arm	CND1909				
27	Frame	CND2582				
28	Bracket	CND2583				
29	Arm	CND2584				
30	Lever	CND2585				D
31	Arm	CND2586				
32	Bracket	CND2587				
33	Arm	CND2588				
34	Lever	CND2589				
35	Holder	CNV7201				
36	Gear	CNV7207				
37	Gear	CNV7208				
38	Gear	CNV7209				E
39	Gear	CNV7210				
40	Gear	CNV7211				
41	Gear	CNV7212				
42	Rack	CNV7214				
43	Arm	CNV7216				
44	Roller	CNV7218				
45	Gear	CNV7219				
46	Guide	CNV7361				
47	Gear	CNV7595				F
48	Guide	CNV7799				
49	Arm	CNV7805				

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A

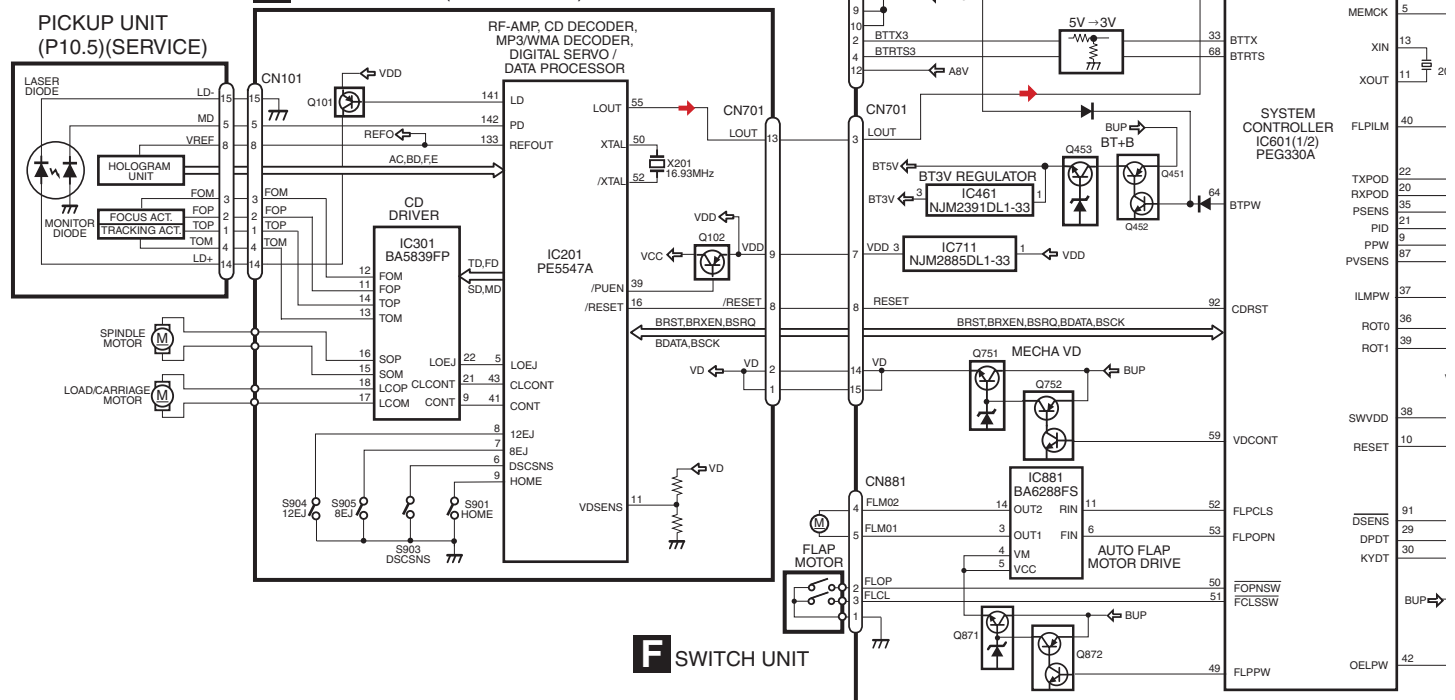
A TUNER AMP UNIT



- Ⓐ: DEH-P7900BT/UC
- Ⓑ: DEH-P790BT/UC
- Ⓒ: DEH-P8950BT/ES

D

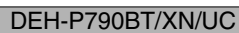
C CD CORE UNIT(S10.5COMP2)



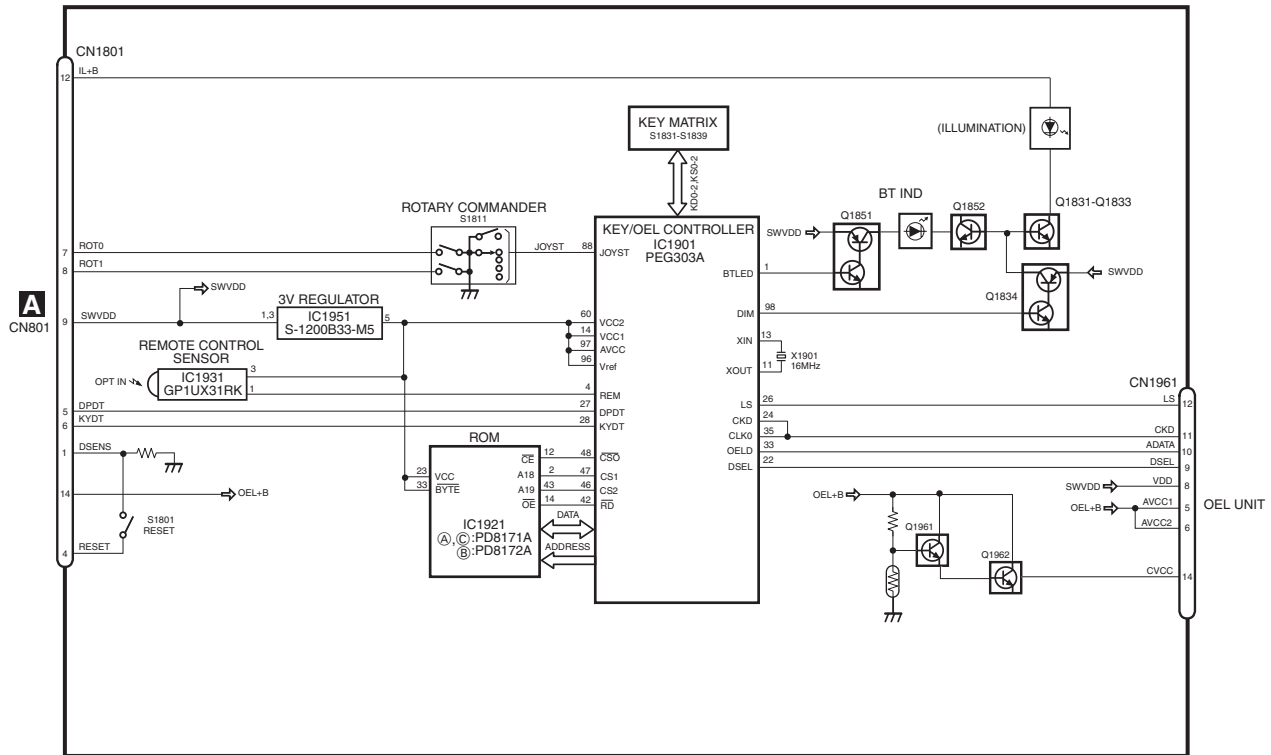
F

F SWITCH UNIT

DEH-P790BT/XN/UC



B KEYBOARD UNIT



Ⓐ:DEH-P7900BT/UC

Ⓑ:DEH-P790BT/UC

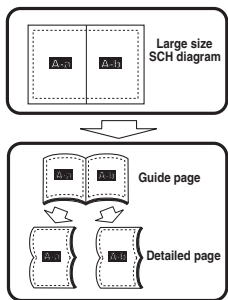
Ⓒ:DEH-P8950BT/ES

A
CN521

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

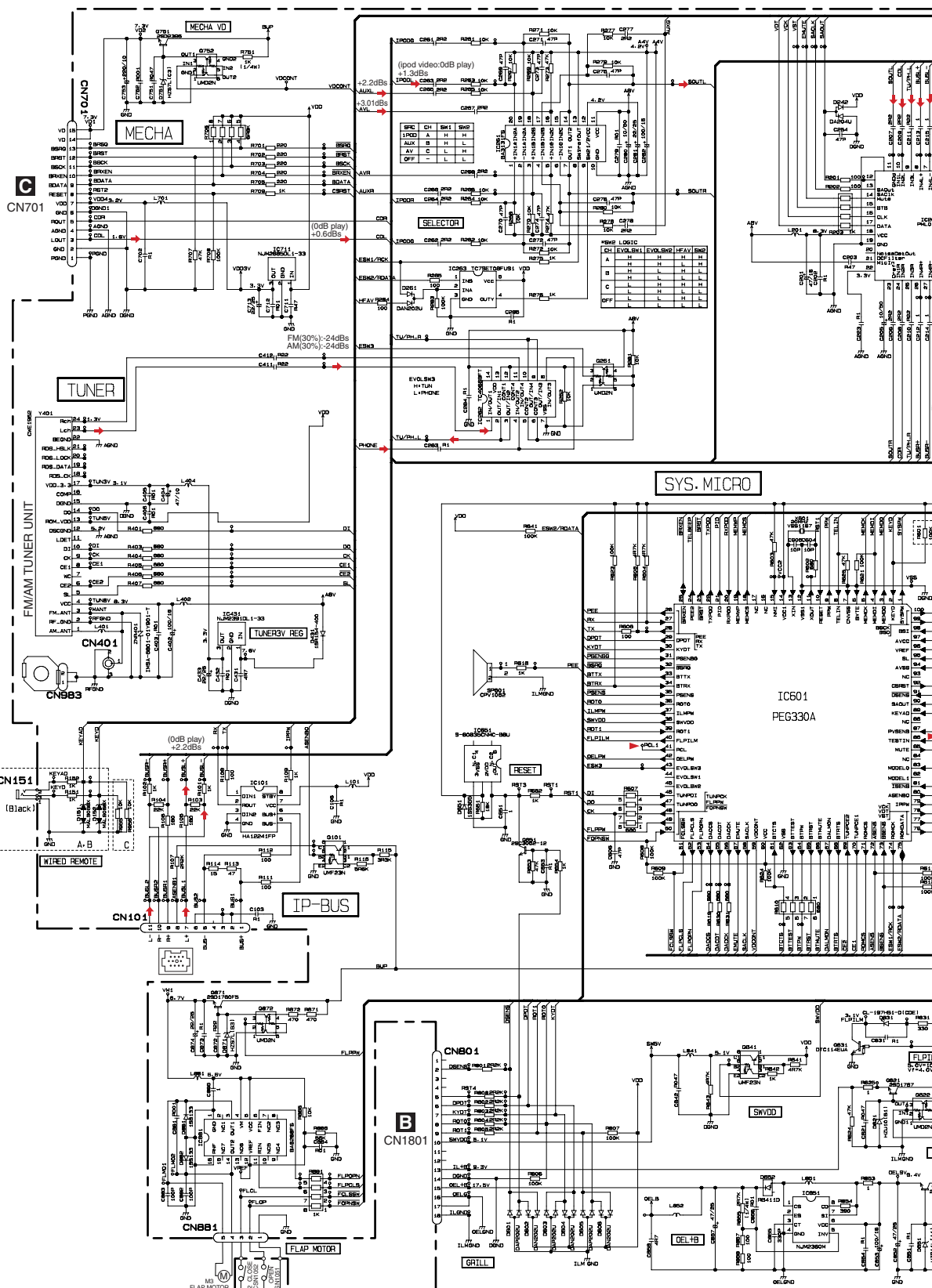
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A



A-a

B



E

F

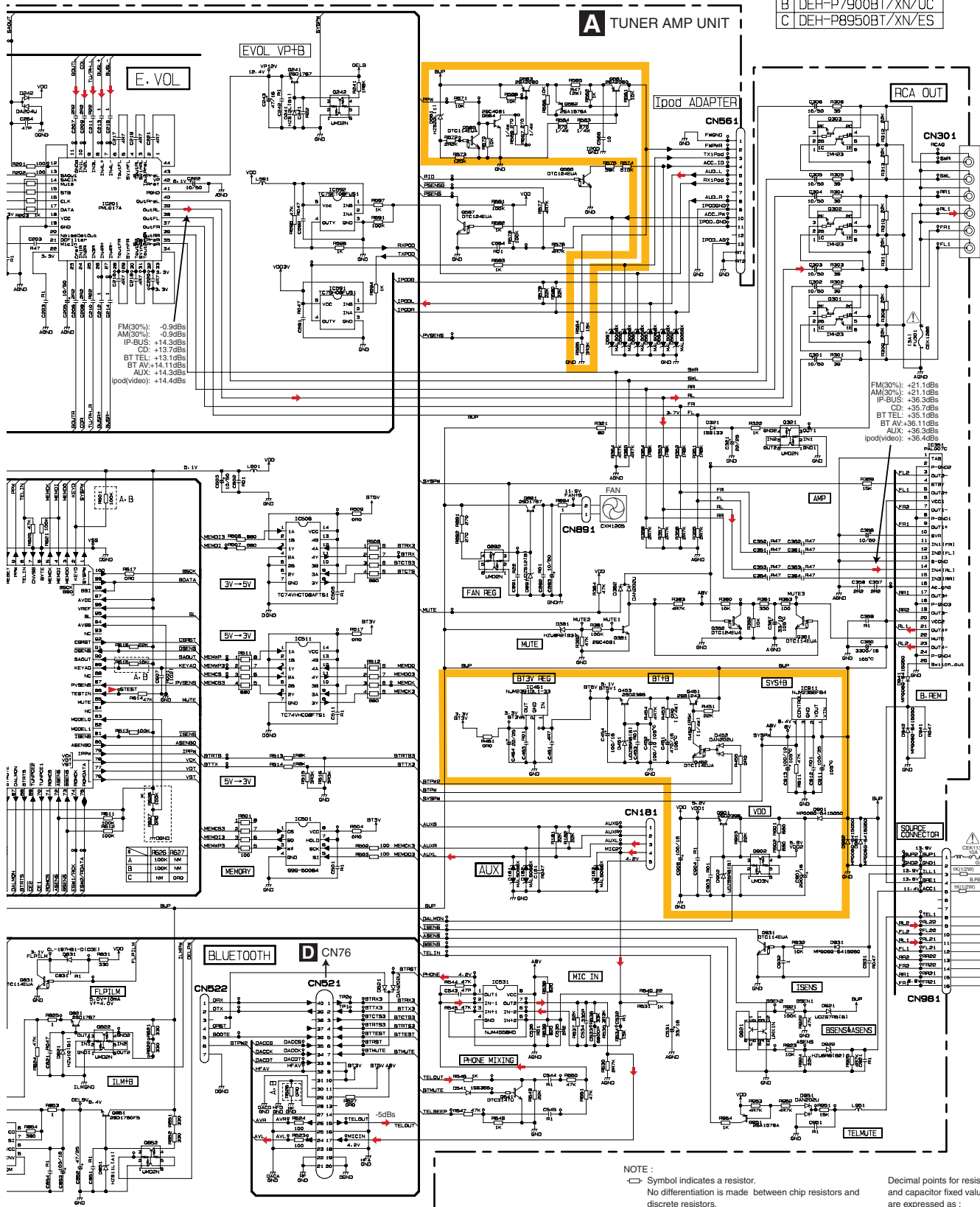
A F

DEH-P790BT/XN/UC

A-b

A TUNER AMP UNIT

A	DEH-P790BT/XN/UC
B	DEH-P7900BT/XN/UC
C	DEH-P8950BT/XN/ES



NOTE :

- Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
- |— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :

2.2 – 2R2

0.022 – R022

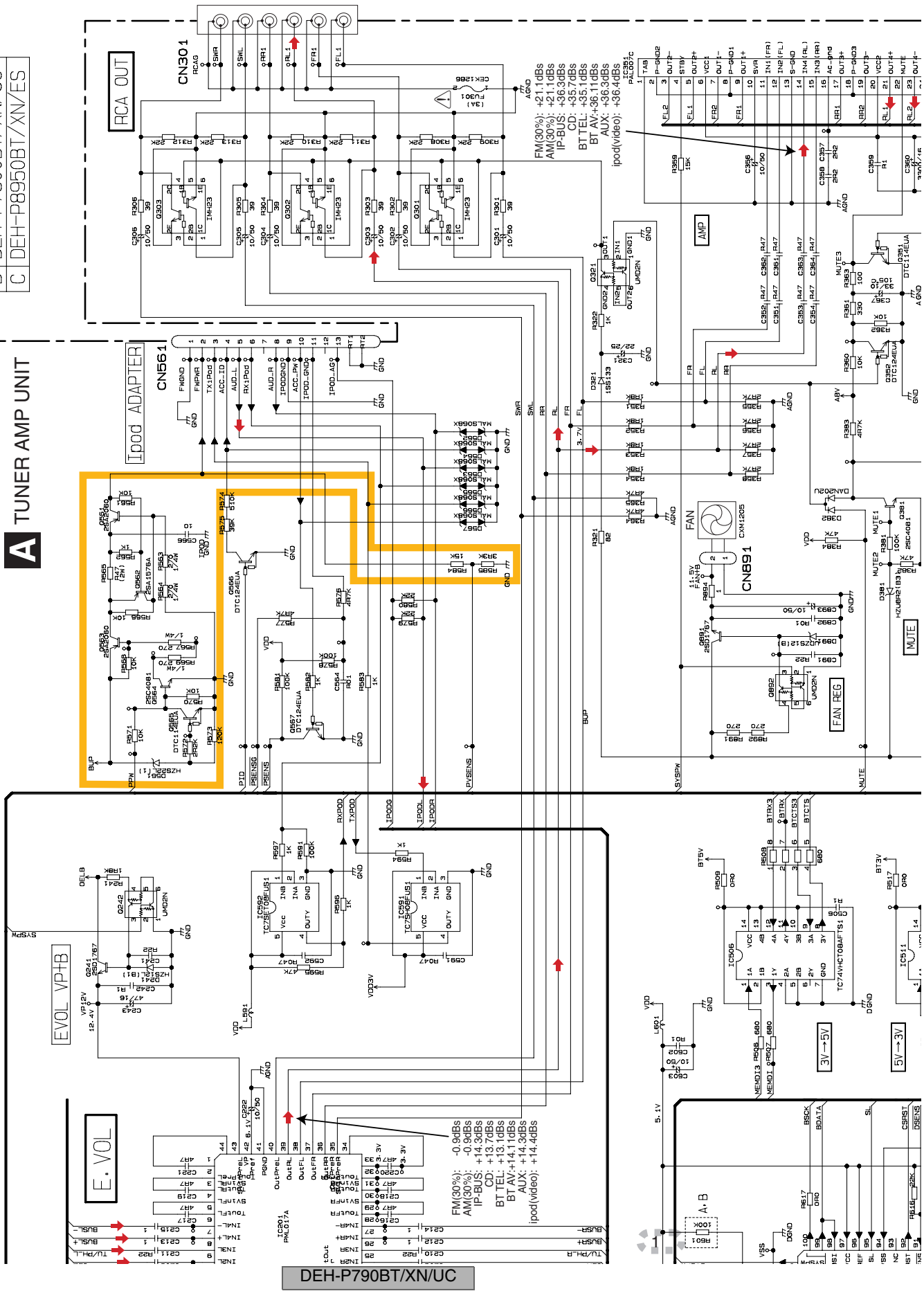
The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

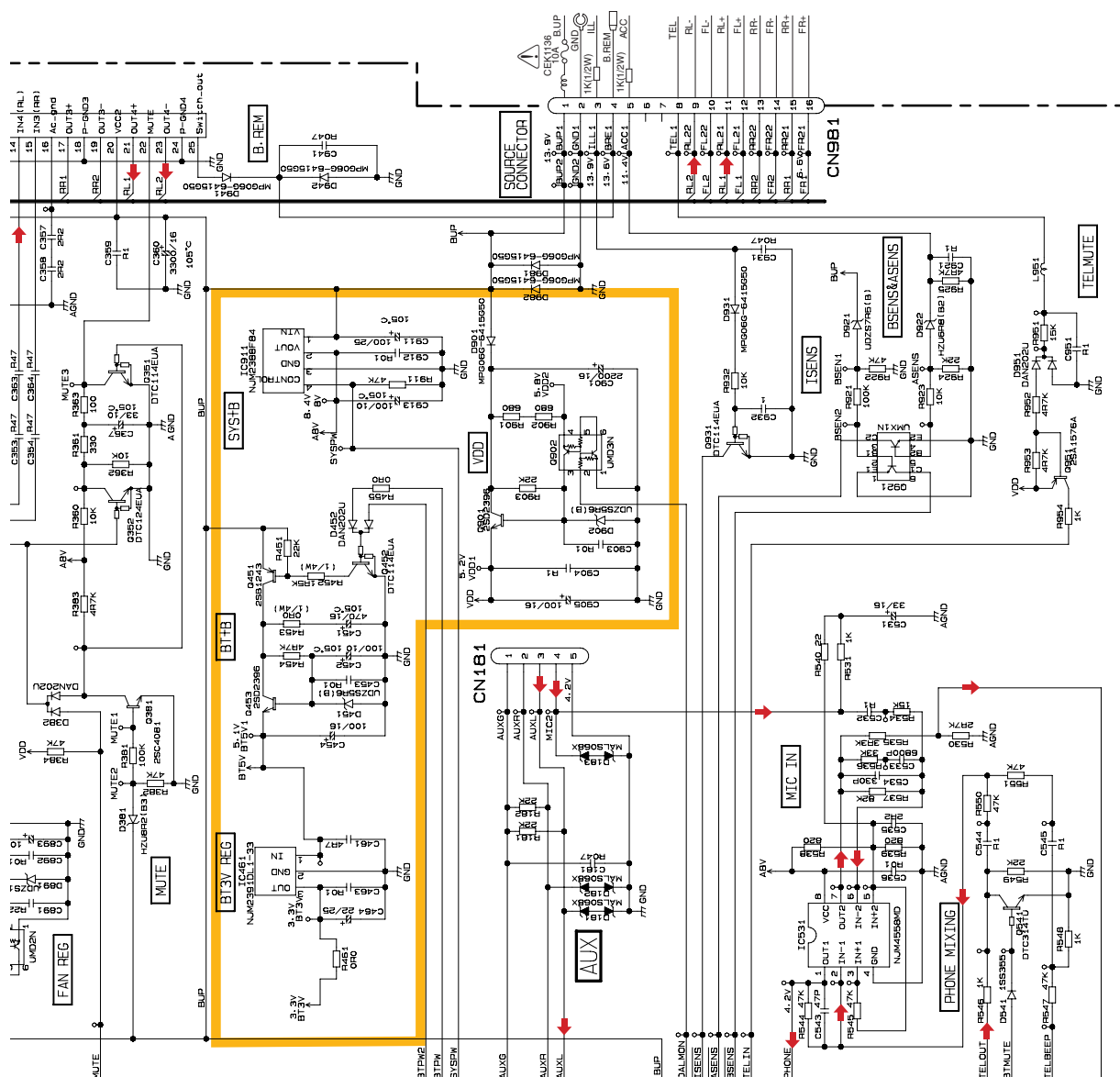
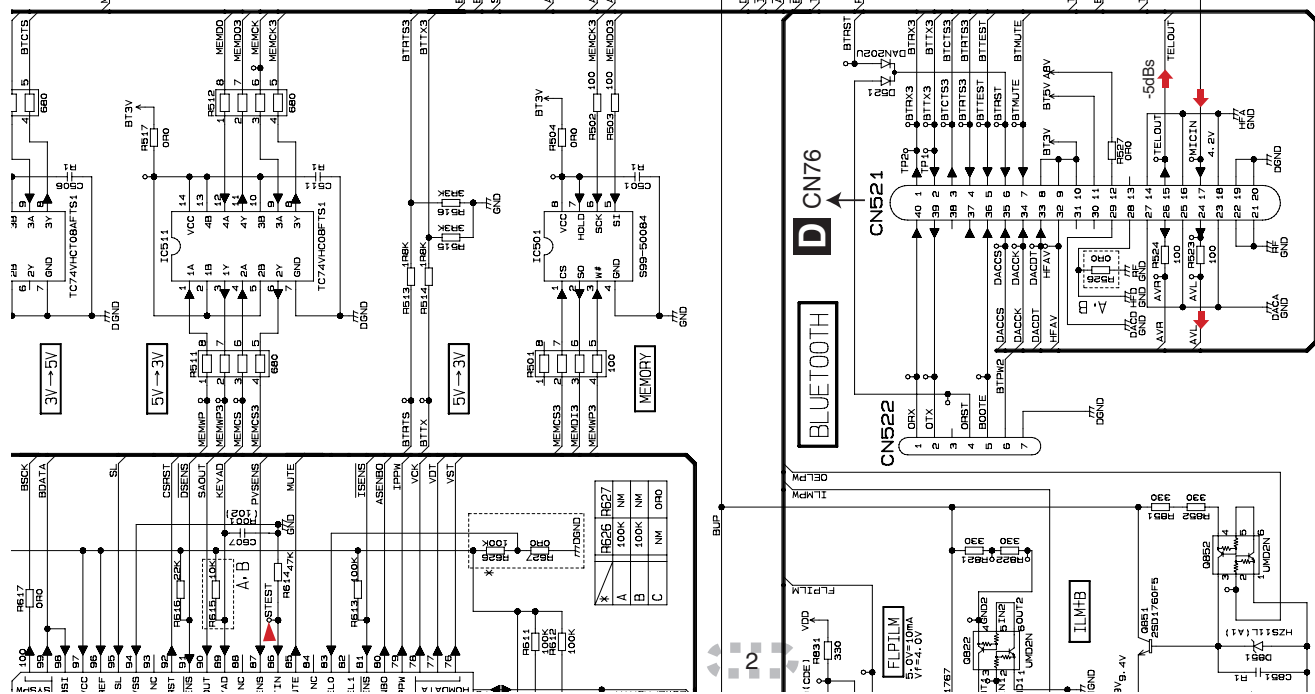
DEH-P790BT/XN/UC

F

A-b

A





NOTE :

—□— Symbol indicates a resistor.

□ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

—||— Symbol indicates a capacitor.

No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :

$$2.2 \rightarrow 2R2$$
 $0.022 \rightarrow R022$

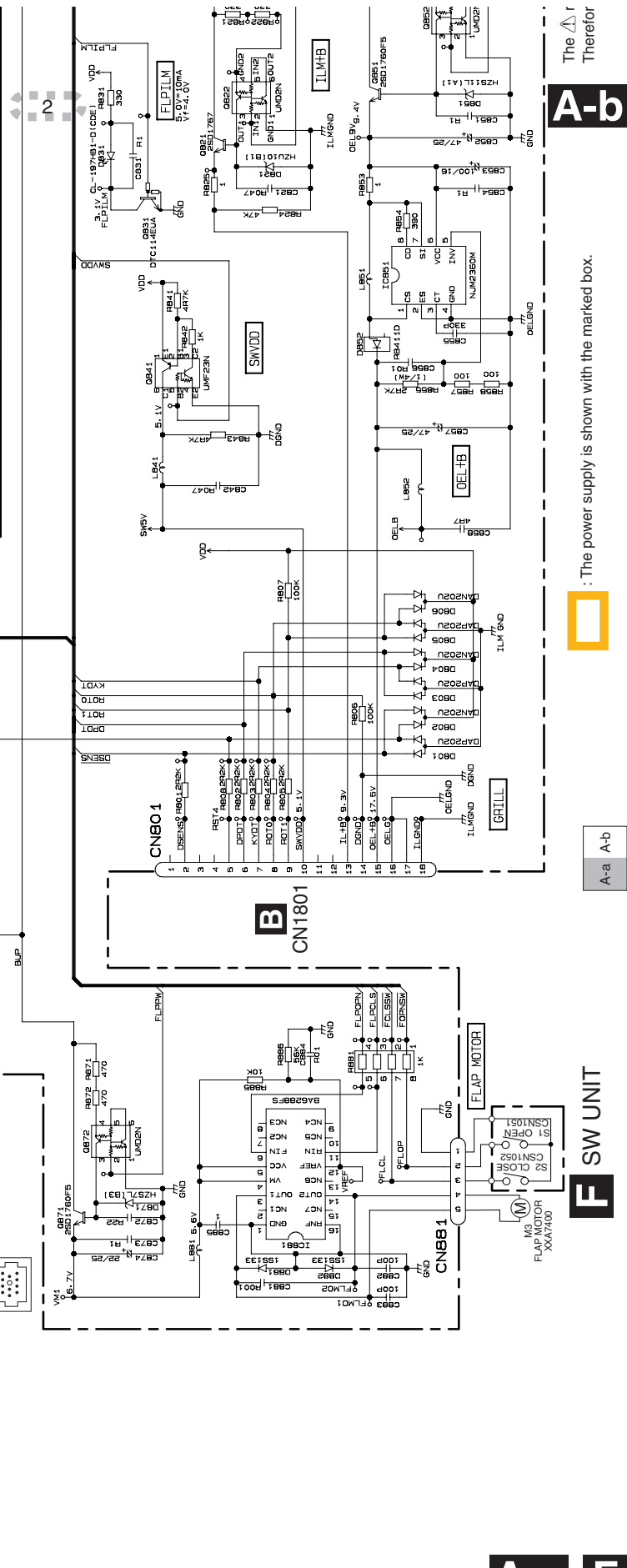
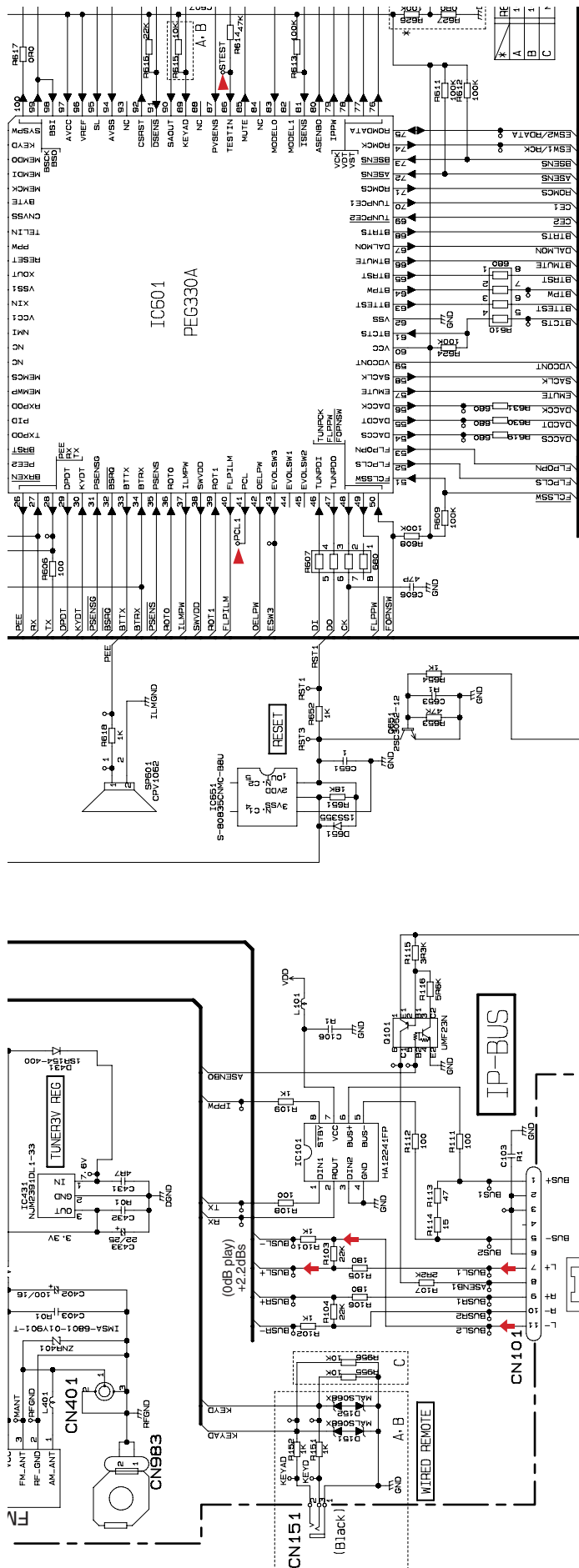
The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

F

A-a A-b

A-a





A-b

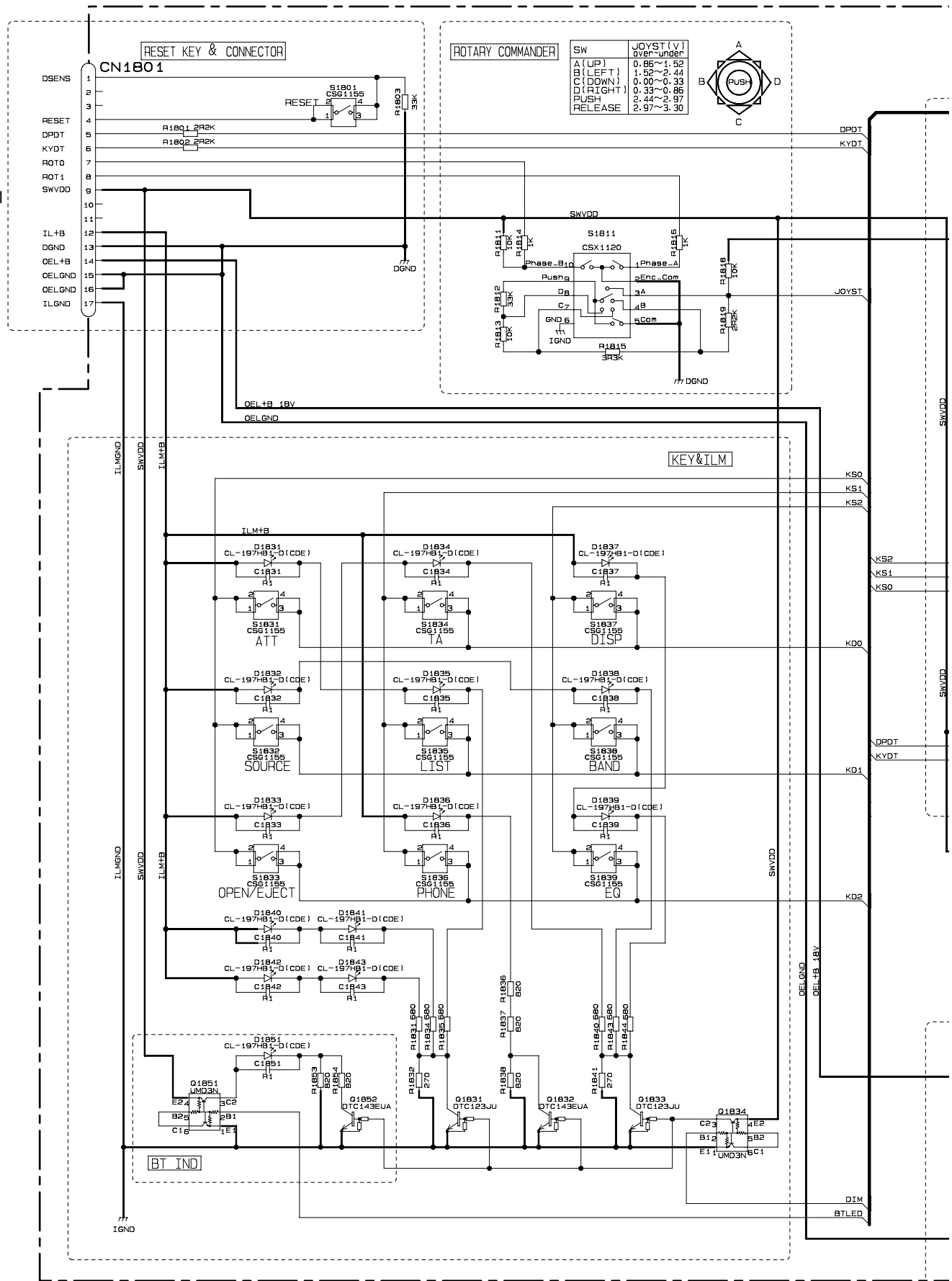
The power supply is shown with the marked box.

A-a A-b

F SW UNIT

A-a F

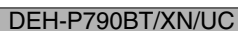
3.3 KEYBOARD UNIT



B KEYBOARD UNIT



C-a








C-b

C CD CORE UNIT(S10.5COMP2)

NOTE1) GND ... CD LSI, RFAMP, CPU
PGND ... Actuator, Motor Driver
AGND ... Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.

☒ Monitor land (φ1.2mm)
 # : Monitor land (φ0.8mm)
☐ Land for manual soldering

 SIGNAL LINE
 FOCUS SERVO LINE
 TRACKING SERVO LINE
 CARRIAGE SERVO LINE
 SPINDLE SERVO LINE

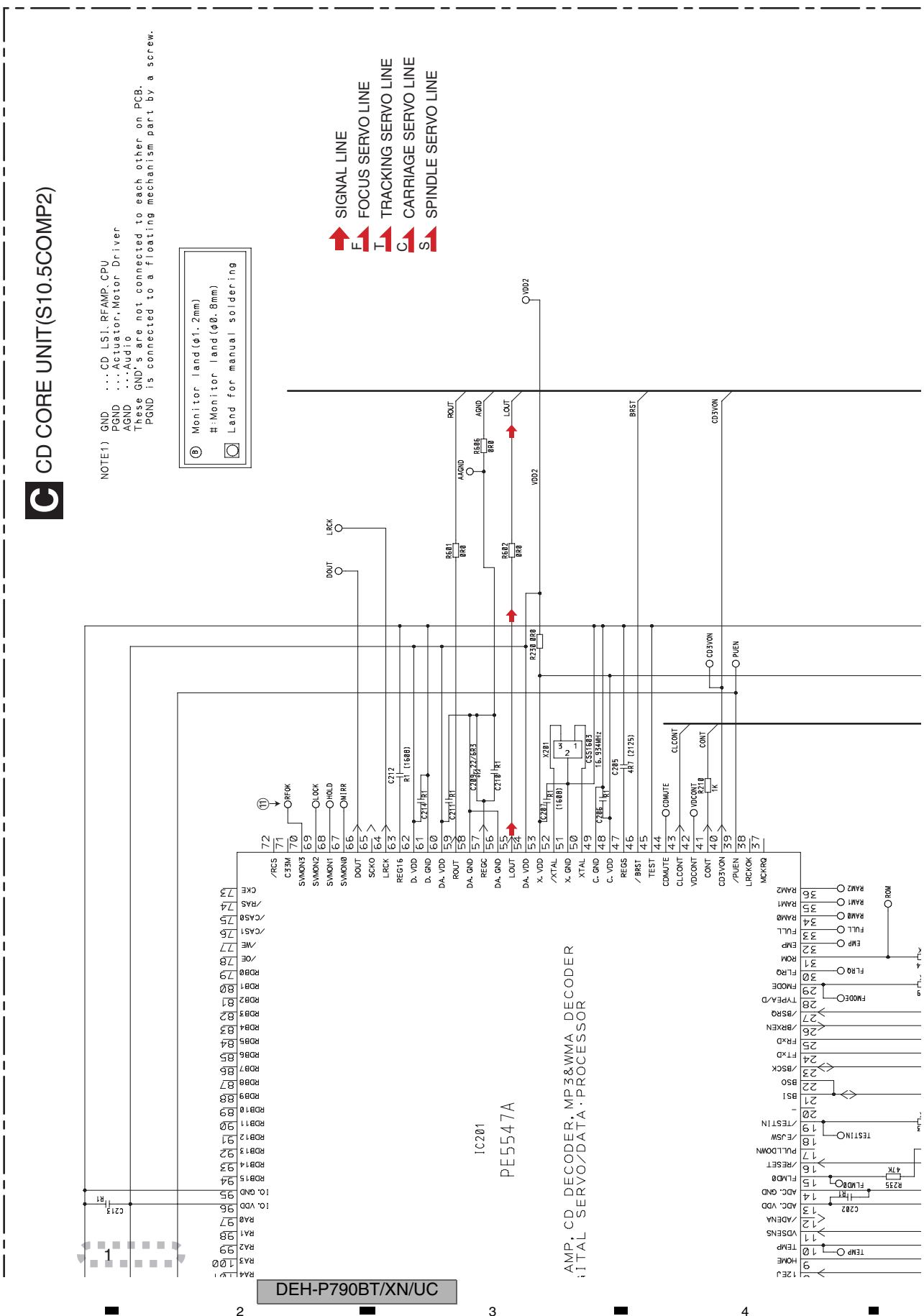
IC201
PE5547A

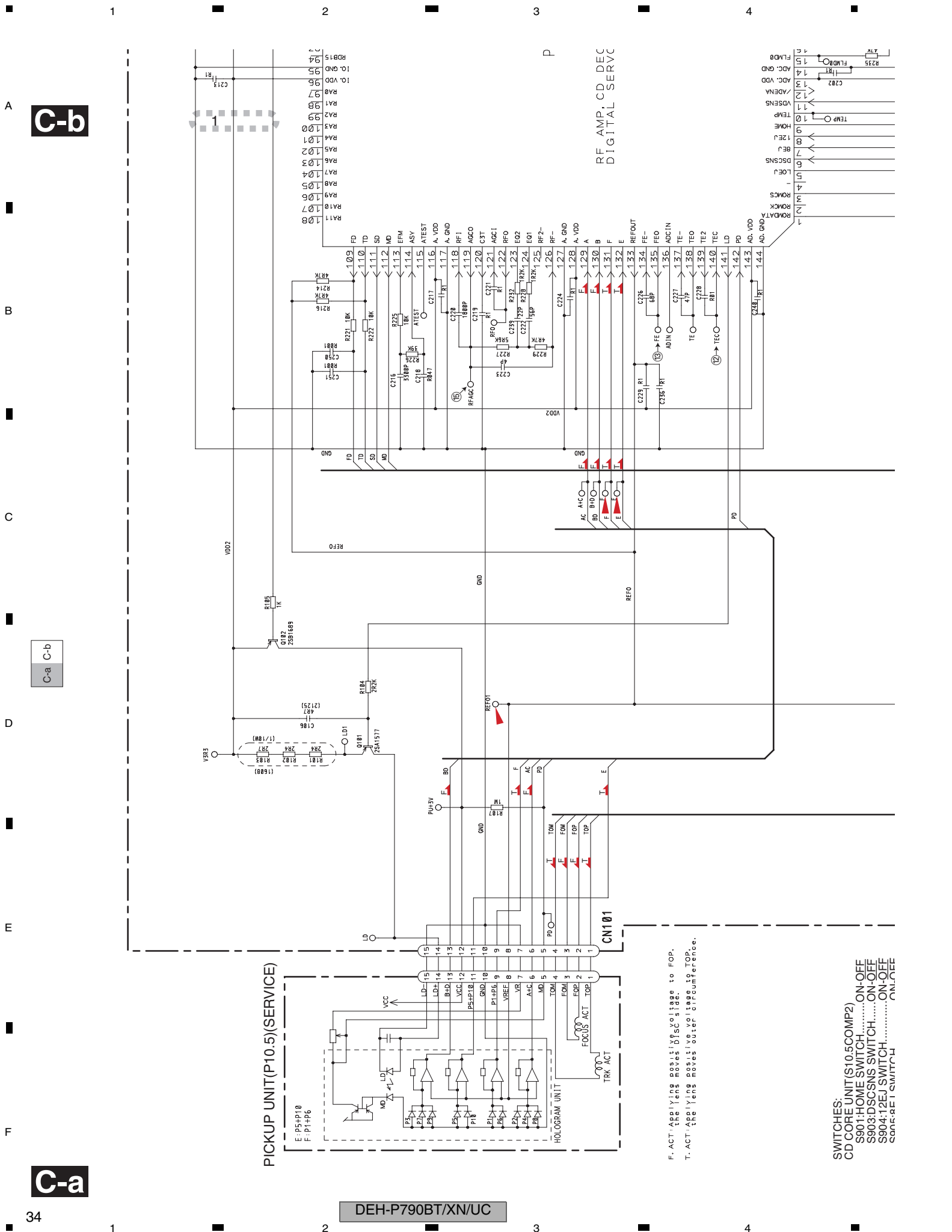
AMP, CD DECODER, MP3&WMA DECODER
DIGITAL SERVO/DATA-PROCESSOR

A
CN701

CN781	
1	VD 7. 5V
2	VD 7. 5V
3	/BSRQ ←
4	/BRST ←
5	/BSCK ↔
6	BRXEN →
7	BDATA ↔
8	/RESET ←
9	VDD 3. 3V
10	GND GND
11	ROUT →
12	AGND GND
13	LOUT →
14	GND GND
15	PGND GND

DEH-P790BT/XN/UC





A
B
C
D
E
F

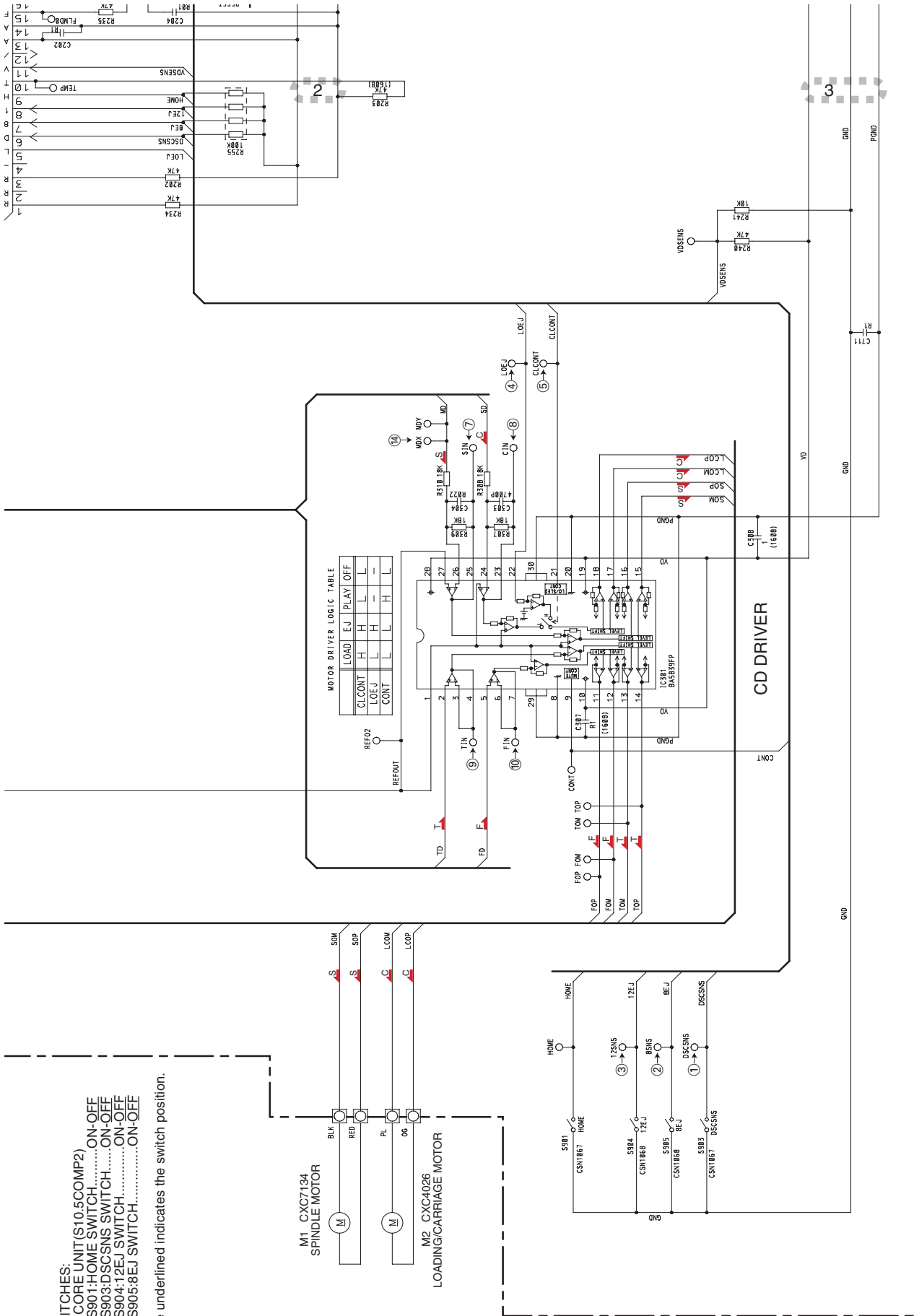
C-b

C-a C-b

C-a

F. ACT. Applying positive V_{DS} voltage to FOP.
T. ACT. Applying positive voltage to TOP.
Applying positive voltage to TOP.
Applying positive voltage to TOP.

SWITCHES:
CD CORE UNIT(S10.5COMP2) ON-OFF
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S904:12EJ SWITCH.....ON-OFF
S905:REI SWITCH.....ON-OFF



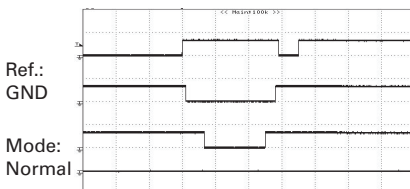
Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65 V)

A

①DSCSNS 5 V/div 500 ms/div
②8SNS 5 V/div
③12SNS 5 V/div
④LOEJ 5 V/div

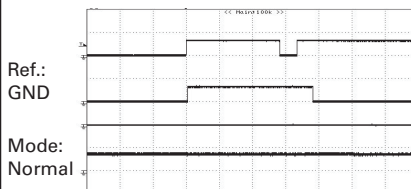
12 cm CD Loading operation



B

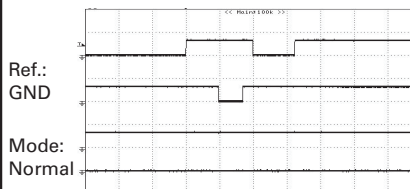
①DSCSNS 5 V/div 500 ms/div
⑤CLCONT 5 V/div
④LOEJ 5 V/div
⑥VD 10 V/div

12 cm CD Loading operation



①DSCSNS 5 V/div 500 ms/div
②8SNS 5 V/div
③12SNS 5 V/div
④LOEJ 5 V/div

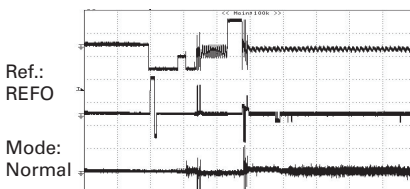
8 cm CD Loading operation



C

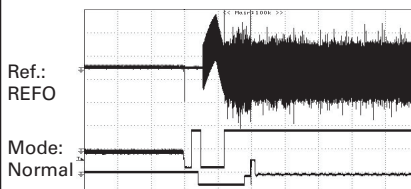
⑦SIN 1 V/div 1 s/div
⑧CIN 500 mV/div
⑨TIN 1 V/div

12 cm CD-DA setup operation after loading



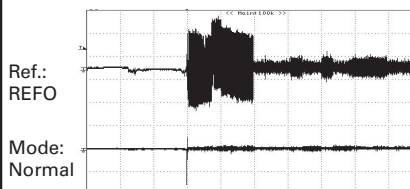
⑩FIN 200 mV/div 500 ms/div
⑪RFOK(MONL_2) 2 V/div
⑦SIN 2 V/div

12 cm CD-DA Source On setup operation



⑫TE 500 mV/div 200 ms/div
⑬FE 500 mV/div

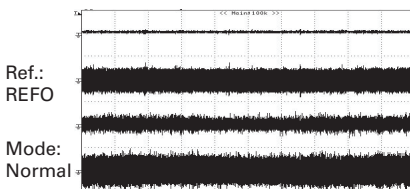
Source On setup operation



D

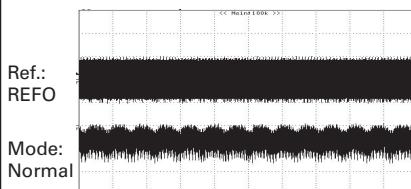
⑬FE 500 mV/div 20 ms/div
⑩FIN 500 mV/div
⑫TE 500 mV/div
⑨TIN 500 mV/div

CD-DA Play operation



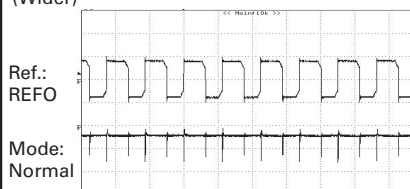
⑭MDX 2 V/div 200 ms/div
⑦SIN 500 mV/div

Spindle waveform during play operation



⑭MDX 2 V/div 5 μs/div
⑦SIN 500 mV/div

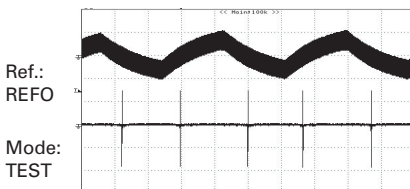
Spindle waveform during play operation (Wider)



E

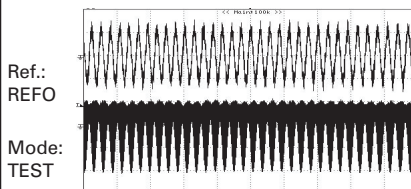
⑩FIN 500 mV/div 200 ms/div
⑬FE 500 mV/div

Focus Search waveform



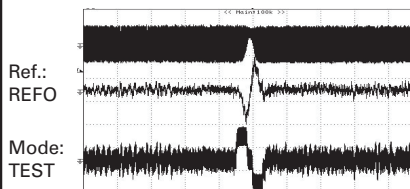
⑫TE 500 mV/div 2 ms/div
⑮RFAGC 500 mV/div

Track Open waveform

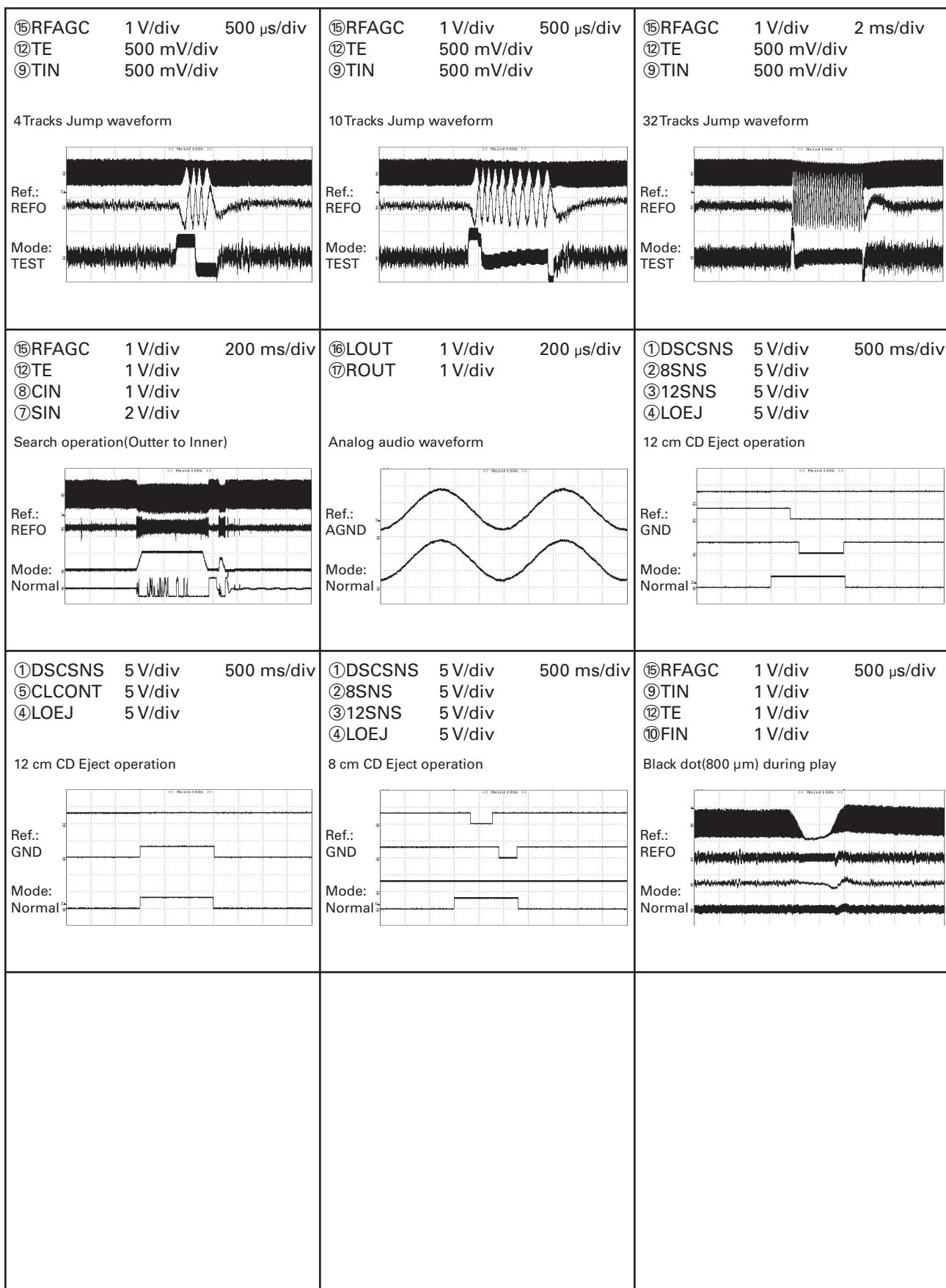


⑮RFAGC 1 V/div 500 μs/div
⑫TE 500 mV/div
⑨TIN 500 mV/div

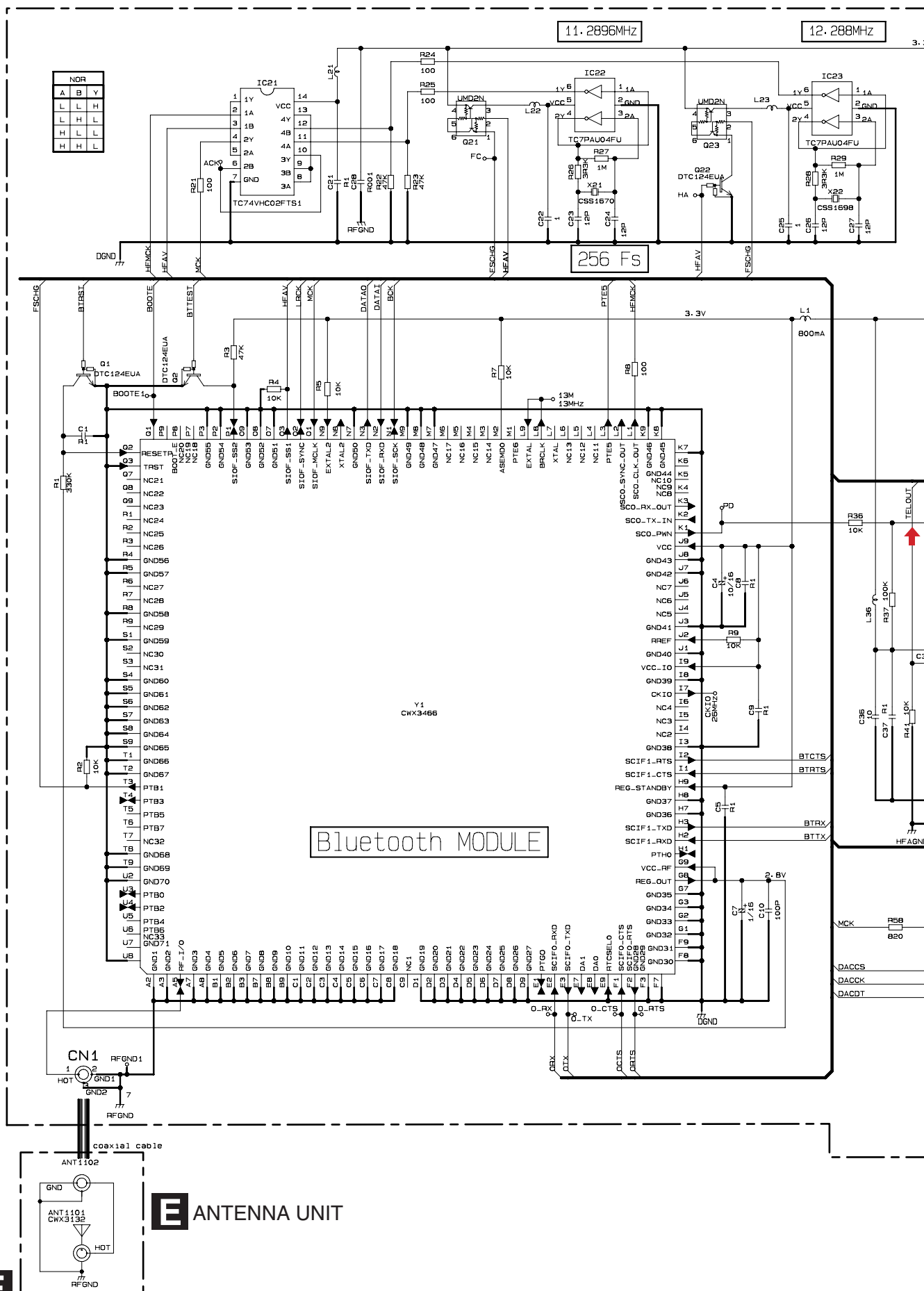
1 Track Jump waveform



F



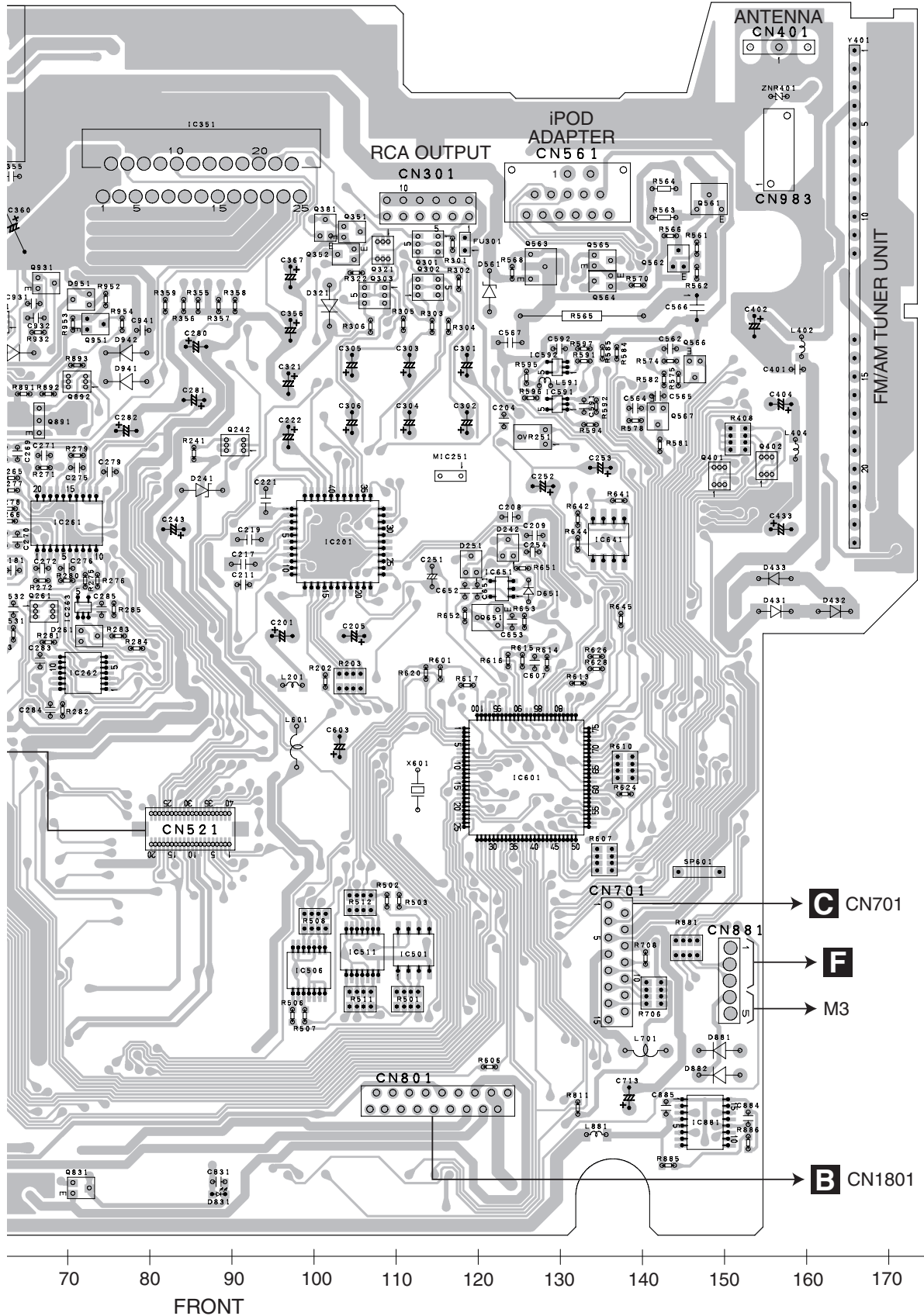
3.5 BLUETOOTH UNIT, ANTENNA UNIT



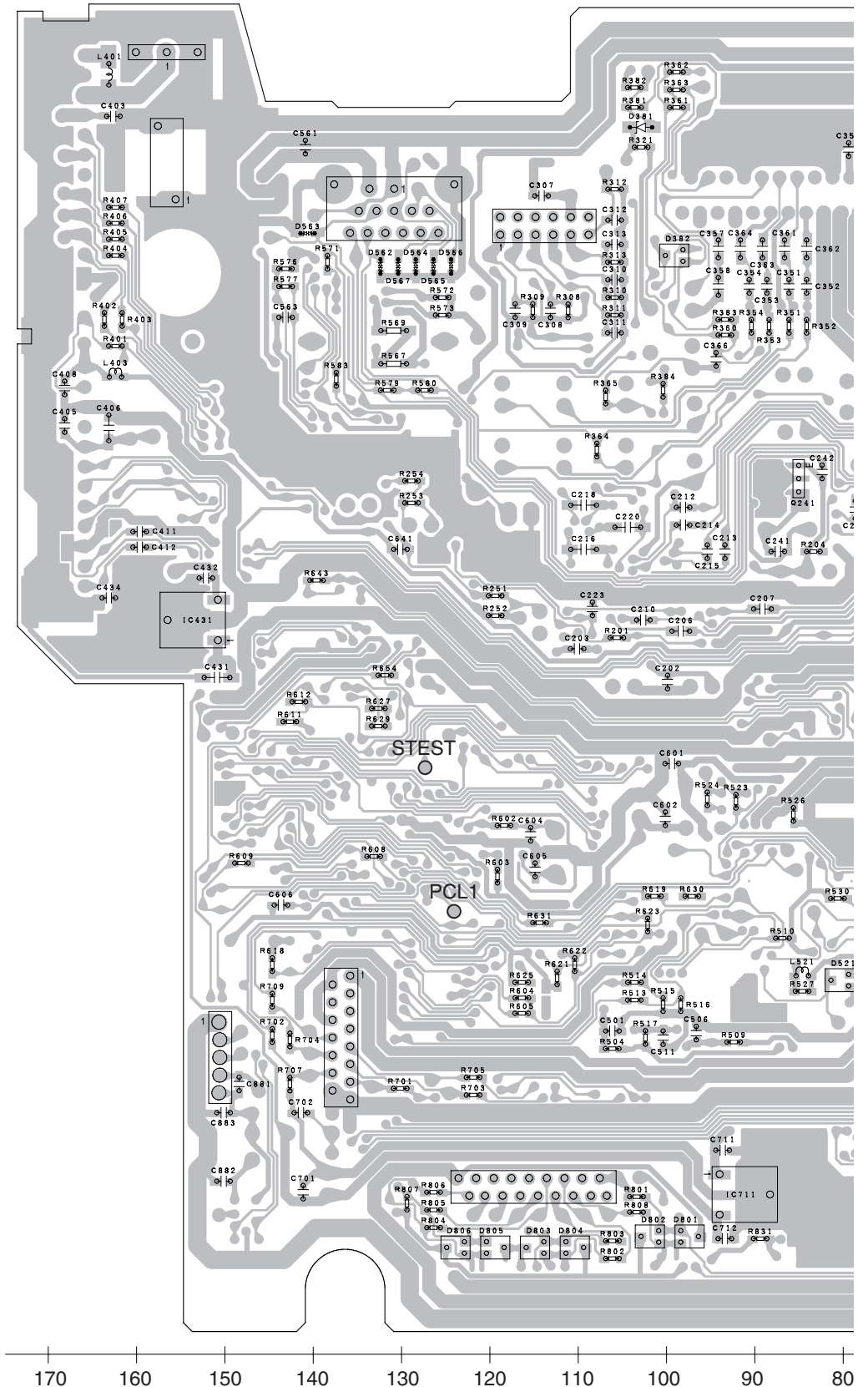


40

SIDE A



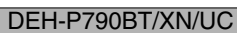
A TUNER AMP UNIT



4

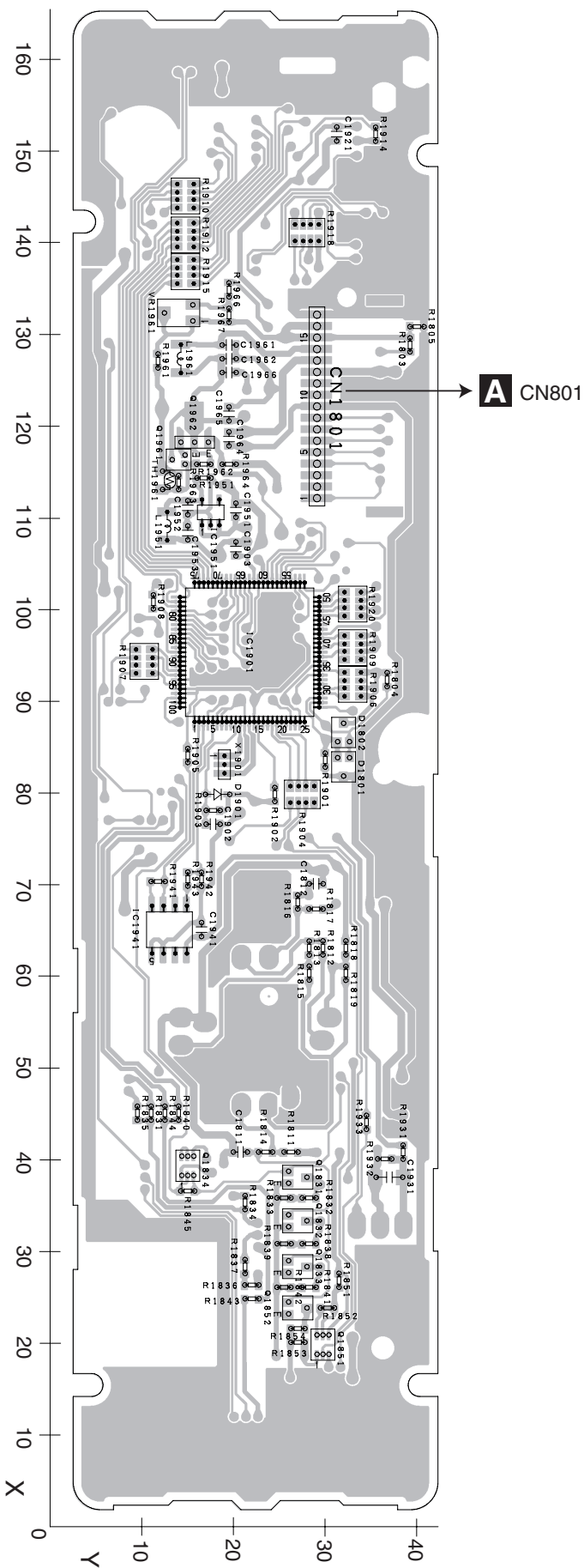
F

B



B

SIDE B



4

A



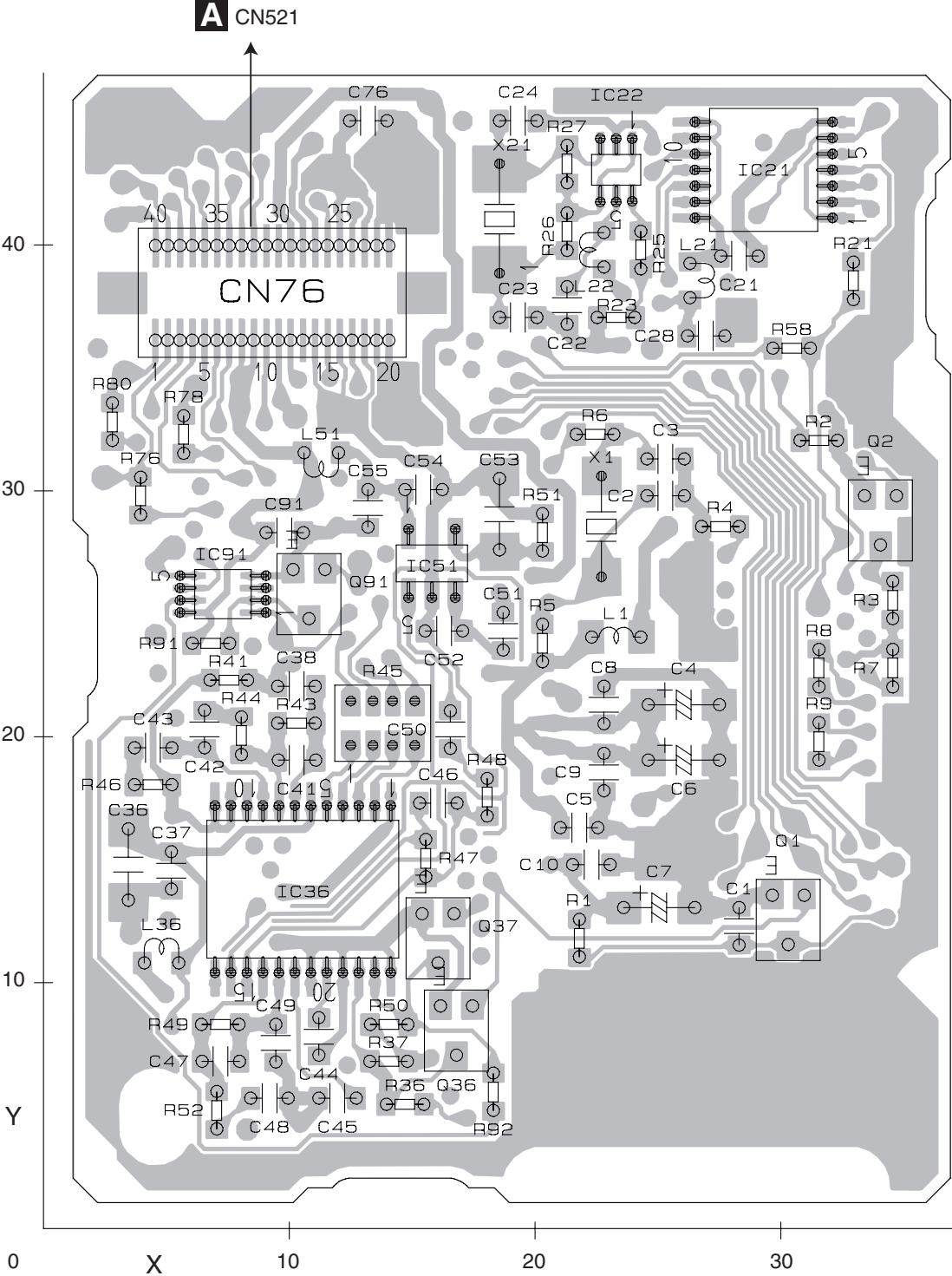
4

1 2 3 4

4.4 BLUETOOTH UNIT

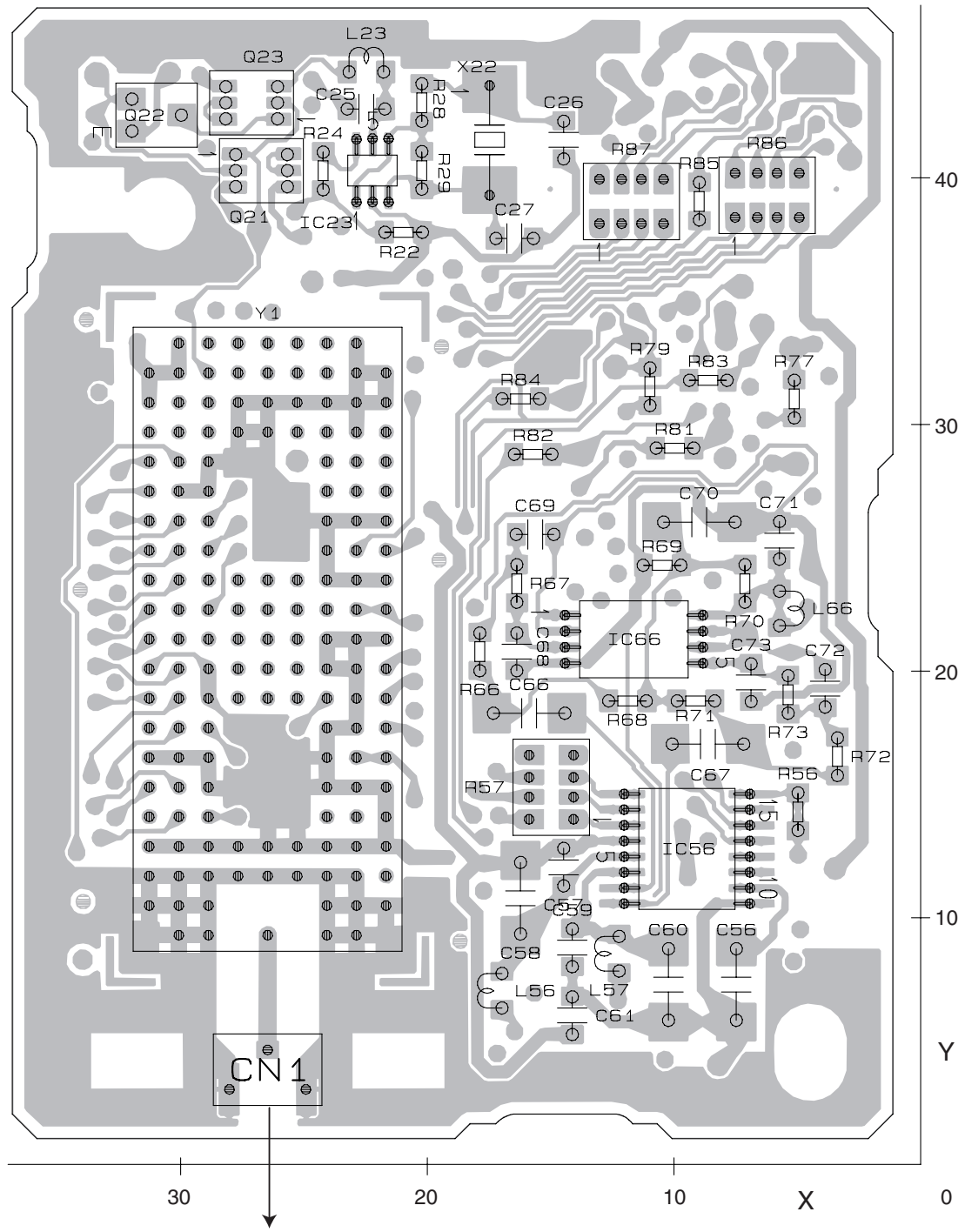
D BLUETOOTH UNIT

SIDE A



D

DEH-P790BT/XN/UC



E ANT1102

1 ■ 2 ■ 3 ■ 4 ■

4.5 ANTENNA UNIT

E ANTENNA UNIT

SIDE A

E ANTENNA UNIT

SIDE B

A

B

C

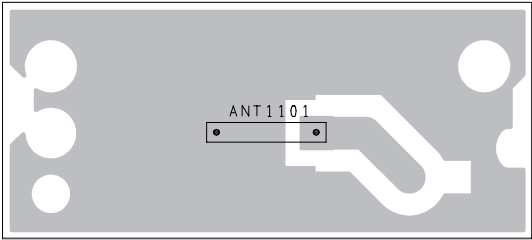
D

E

F

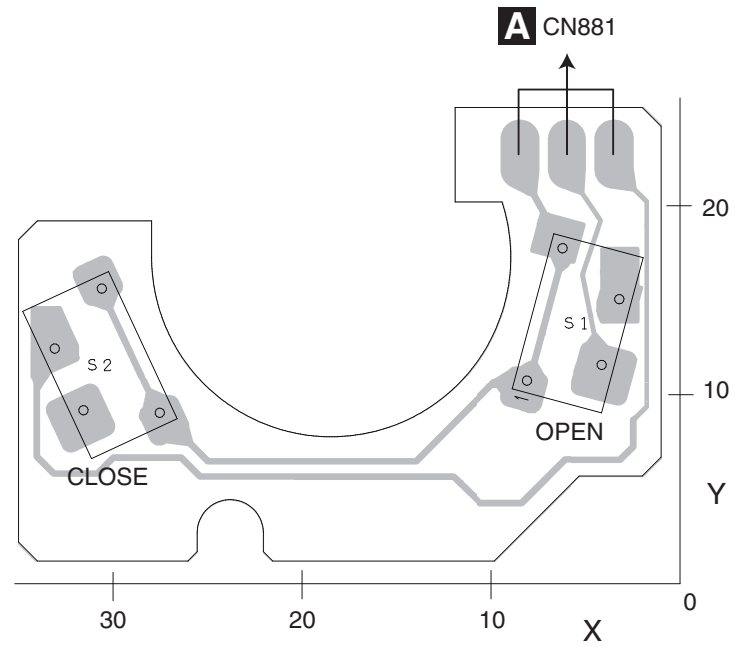


D CN1



4.6 SWITCH UNIT

F SWITCH UNIT



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○○○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

Circuit Symbol and No.

Part No.

Unit Number :

CWN2343(P790BT,P7900BT)

Unit Number : CWN2344(P8950BT)

Unit Name : Tuner Amp Unit

Unit Number :

Unit Name : Keyboard Unit

Unit Number : CWN2339

Unit Name : Bluetooth Unit

Unit Number : CWN2634

Unit Name : Antenna Unit

Unit Number : CWS1389

Unit Name : Switch Unit

Unit Number : CWX3514

Unit Name : CD Core

Unit(S10.5COMP2)

A

Unit Number :

CWN2343(P790BT,P7900BT)

Unit Number : CWN2344(P8950BT)

Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 101	(A,16,117) IC	HA12241FP
IC 201	(A,103,87) IC	PML017A
IC 261	(A,70,89) IC	BA3131FS
IC 262	(A,72,71) IC	TC4066BFT
IC 263	(A,72,79) L-MOS And Gate	TC7SET08FUS1

IC 351	(A,86,135) IC	PAL007C
IC 431	(B,155,83) IC	NJM2391DL1-33
IC 461	(B,39,71) IC	NJM2391DL1-33

Circuit Symbol and No.

Part No.

IC 501	(A,112,37) IC	S99-50084
IC 506	(A,99,35) IC	TC74VHCT08AFTS1

IC 511	(A,106,37) IC	TC74VHC08FTS1
IC 531	(B,55,48) IC	NJM4558MD
IC 591	(A,130,104) IC	TC7SH08FUS1
IC 592	(A,130,108) L-MOS And Gate	TC7SET08FUS1
IC 601	(A,126,58) IC	PEG330A

IC 651	(A,123,81) IC	S-80835CNMC-B8U
IC 711	(B,89,18) IC	NJM2885DL1-33
IC 851	(A,33,22) IC	NJM2360M
IC 881	(A,148,16) IC	BA6288FS
IC 911	(A,15,79) IC	NJM2388F84

Q 101	(A,25,116) Transistor	UMF23N
Q 241	(B,87,99) Transistor	2SD1767
Q 242	(A,90,99) Transistor	UMD2N
Q 261	(A,67,79) Transistor	UMD2N
Q 301	(A,114,123) Transistor	IMH23

Q 302	(A,114,118) Transistor	IMH23
Q 303	(A,107,117) Transistor	IMH23
Q 321	(A,108,123) Transistor	UMD2N
Q 351	(A,105,125) Chip Transistor	DTC114EUA
Q 352	(A,104,122) Chip Transistor	DTC124EUA

Q 381	(A,101,125) Transistor	2SC4081
Q 451	(A,29,100) Transistor	2SB1243
Q 452	(A,35,103) Chip Transistor	DTC114EUA
Q 453	(A,14,100) Transistor	2SD2396
Q 541	(B,56,37) Transistor	DTC314TU

Q 561	(A,148,129) Transistor	2SA2060
Q 562	(A,144,122) Transistor	2SA1576A
Q 563	(A,128,121) Transistor	2SA2060
Q 564	(A,135,119) Transistor	2SC4081
Q 565	(A,135,121) Chip Transistor	DTC114EUA

Q 566	(A,146,108) Chip Transistor	DTC124EUA
Q 567	(A,142,102) Chip Transistor	DTC124EUA
Q 651	(A,121,78) Transistor	2SC3052-12
Q 751	(A,14,70) Transistor	2SD2396
Q 752	(A,31,69) Transistor	UMD2N

Q 821	(A,47,51) Transistor	2SD1767
Q 822	(A,51,50) Transistor	UMD2N
Q 831	(A,72,8) Chip Transistor	DTC114EUA
Q 841	(A,51,40) Transistor	UMF23N

	1	2	3	4
	<u>Circuit Symbol and No.</u>	<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
	R 277 (A,63,93)	RS1/16S103J	R 508 (A,100,41)	RAB4C681J
A	R 278 (A,63,91)	RS1/16S103J	R 509 (B,92,35)	RS1/16S0R0J
	R 279 (A,71,98)	RS1/16S103J	R 511 (A,106,31)	RAB4C681J
	R 280 (A,70,82)	RS1/16S103J	R 512 (A,106,43)	RAB4C681J
	R 281 (A,68,75)	RS1/16S103J	R 513 (B,104,40)	RS1/16S182J
	R 282 (A,69,67)	RS1/16S103J	R 514 (B,104,42)	RS1/16S182J
■	R 283 (A,76,76)	RS1/16S104J	R 515 (B,100,40)	RS1/16S332J
	R 284 (A,78,74)	RS1/16S101J	R 516 (B,98,40)	RS1/16S332J
	R 285 (A,76,79)	RS1/16S101J	R 517 (B,102,36)	RS1/16S0R0J
	R 301 (A,117,123)	RS1/16S390J	R 523 (B,92,63)	RS1/16S101J
	R 302 (A,118,119)	RS1/16S390J	R 524 (B,95,63)	RS1/16S101J
B	R 303 (A,114,113)	RS1/16S390J	R 526 (B,86,61) (P790BT,P7900BT)	RS1/16S0R0J
	R 304 (A,116,113)	RS1/16S390J	R 527 (B,85,41)	RS1/16S0R0J
	R 305 (A,111,114)	RS1/16S390J	R 530 (B,81,52)	RS1/16S272J
	R 306 (A,107,113)	RS1/16S390J	R 531 (A,63,76)	RS1/16S102J
	R 308 (B,111,118)	RS1/16S223J	R 534 (B,43,49)	RS1/16S153J
■	R 309 (B,115,118)	RS1/16S223J	R 535 (B,61,54)	RS1/16S332J
	R 310 (B,106,120)	RS1/16S223J	R 536 (B,46,52)	RS1/16S333J
	R 311 (B,106,118)	RS1/16S223J	R 537 (B,49,49)	RS1/16S823J
	R 312 (B,106,132)	RS1/16S223J	R 538 (B,54,54)	RS1/16S821J
	R 313 (B,106,124)	RS1/16S223J	R 539 (B,55,40)	RS1/16S821J
C	R 321 (B,103,137)	RS1/16S820J	R 540 (B,66,51)	RS1/16S220J
	R 322 (A,105,120)	RS1/16S102J	R 544 (B,61,48)	RS1/16S473J
	R 351 (B,86,116)	RS1/16S182J	R 545 (B,57,53)	RS1/16S473J
	R 352 (B,84,116)	RS1/16S182J	R 546 (B,65,36)	RS1/16S102J
	R 353 (B,88,116)	RS1/16S182J	R 547 (B,68,39)	RS1/16S473J
■	R 354 (B,90,116)	RS1/16S182J	R 548 (B,62,39)	RS1/16S102J
	R 355 (A,86,116)	RS1/16S272J	R 549 (B,60,39)	RS1/16S223J
	R 356 (A,84,116)	RS1/16S272J	R 550 (B,62,43)	RS1/16S473J
	R 357 (A,88,116)	RS1/16S272J	R 551 (B,62,45)	RS1/16S473J
	R 358 (A,90,116)	RS1/16S272J	R 561 (A,147,123)	RS1/16S103J
D	R 359 (A,82,116)	RS1/16S153J	R 562 (A,147,120)	RS1/16S102J
	R 360 (B,93,115)	RS1/16S103J	R 563 (A,143,127)	RS1/4SA271J
	R 361 (B,99,141)	RS1/16S331J	R 564 (A,143,130)	RS1/4SA271J
	R 362 (B,99,145)	RS1/16S103J	R 565 (A,133,115)	RS2PMFR47J
	R 363 (B,99,143)	RS1/16S101J	R 566 (A,143,124)	RS1/16S103J
■	R 364 (B,108,102)	RS1/16S472J	R 567 (B,131,112)	RS1/4SA271J
	R 365 (B,107,108)	RS1/16S472J	R 568 (A,124,120)	RS1/16S103J
	R 381 (B,104,141)	RS1/16S104J	R 569 (B,131,116)	RS1/4SA271J
	R 382 (B,104,143)	RS1/16S473J	R 570 (A,139,118)	RS1/16S103J
	R 383 (B,93,117)	RS1/16S472J	R 571 (B,138,124)	RS1/16S103J
E	R 384 (B,100,109)	RS1/16S473J	R 572 (B,125,120)	RS1/16S222J
	R 401 (B,162,114)	RS1/16S681J	R 573 (B,125,118)	RS1/16S124J
	R 403 (B,162,117)	RS1/16S681J	R 574 (A,143,109)	RS1/16S514J
	R 404 (B,162,124)	RS1/16S681J	R 575 (A,144,107)	RS1/16S393J
	R 405 (B,162,126)	RS1/16S681J	R 576 (B,143,123)	RS1/16S472J
■	R 406 (B,162,128)	RS1/16S681J	R 577 (B,143,121)	RS1/16S472J
	R 407 (B,162,130)	RS1/16S681J	R 578 (A,139,102)	RS1/16S104J
	R 451 (A,29,106)	RS1/16S223J	R 579 (B,132,109)	RS1/16S223J
	R 452 (A,25,100)	RD1/4PU152J	R 580 (B,127,109)	RS1/16S223J
	R 453 (A,21,100)	RD1/4PU0R0J	R 581 (A,142,99)	RS1/16S104J
F	R 454 (A,18,98)	RS1/16S472J	R 582 (A,143,107)	RS1/16S102J
	R 455 (A,20,88)	RS1/16S0R0J	R 583 (B,137,110)	RS1/16S102J
	R 461 (B,63,25)	RS1/16S0R0J	R 584 (A,137,110)	RS1/16S153J
	R 501 (A,111,31)	RAB4C101J	R 585 (A,135,110)	RS1/16S332J
	R 502 (A,109,43)	RS1/16S101J	R 591 (A,133,111)	RS1/16S104J
F	R 503 (A,110,43)	RS1/16S101J	R 594 (A,134,101)	RS1/16S102J
	R 504 (B,106,35)	RS1/16S0R0J	R 595 (A,126,107)	RS1/16S473J
	R 506 (A,97,29)	RS1/16S681J	R 596 (A,126,105)	RS1/16S102J
	R 507 (A,99,29)	RS1/16S681J	R 597 (A,133,109)	RS1/16S102J

	1	2	3	4
	<u>Circuit Symbol and No.</u>	<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
	C 254 (A,127,86)	CCSRCH470J50	C 454 (A,21,108)	CEJQ101M16
	C 261 (B,63,95)	CKSQYB225K10	C 461 (B,43,77)	CKSYB475K16
A	C 262 (B,70,89)	CKSQYB225K10	C 463 (B,43,66)	CKSRYB103K50
	C 263 (B,68,98)	CKSQYB225K10	C 464 (A,47,69)	CEJQ220M25
	C 264 (B,63,92)	CKSQYB225K10	C 501 (B,106,37)	CKSRYB104K16
	C 265 (A,59,96)	CKSQYB225K10	C 506 (B,97,36)	CKSRYB104K16
	C 266 (A,59,90)	CKSQYB225K10	C 511 (B,100,36)	CKSRYB104K16
	C 267 (B,79,96)	CKSQYB225K10	C 531 (A,58,68)	CEJQ330M16
	C 268 (B,77,91)	CKSQYB225K10	C 532 (A,63,79)	CKSRYB104K16
	C 269 (A,64,98)	CCSRCH470J50	C 533 (B,45,49)	CKSRYB682K50
	C 270 (A,64,87)	CCSRCH470J50	C 534 (B,47,49)	CKSRYB331K50
	C 271 (A,67,98)	CCSRCH470J50	C 535 (B,55,42)	CKSQYB225K10
	C 272 (A,67,84)	CCSRCH470J50	C 536 (B,54,52)	CKSRYB103K50
B	C 273 (B,74,96)	CCSRCH470J50	C 543 (B,63,48)	CCSRCH470J50
	C 274 (B,72,92)	CCSRCH470J50	C 544 (B,64,39)	CKSRYB104K16
	C 275 (A,71,96)	CCSRCH470J50	C 545 (B,66,39)	CKSRYB104K16
	C 276 (A,70,84)	CCSRCH470J50	C 564 (A,139,103)	CKSRYB103K50
	C 277 (A,59,94)	CKSQYB225K10	C 566 (A,147,116) 10 μ F	CCG1223
	C 278 (A,59,92)	CKSQYB225K10	C 591 (A,133,104)	CKSRYB473K50
	C 279 (A,75,96)	CKSRYB103K50	C 592 (A,130,111)	CKSRYB473K50
	C 280 (A,86,111)	CEJQ100M50	C 602 (B,100,61)	CKSRYB103K50
	C 281 (A,85,104)	CEJQ220M25	C 603 (A,103,62)	CEJQ100M50
	C 282 (A,77,101)	CEJQ101M16	C 604 (B,115,59)	CCSRCH100D50
	C 283 (A,67,73)	CKSRYB104K16	C 605 (B,115,55)	CCSRCH100D50
C	C 284 (A,68,67)	CKSRYB104K16	C 606 (B,144,51)	CCSRCH470J50
	C 285 (A,74,79)	CKSRYB104K16	C 607 (A,127,72)	CKSRYB102K50
	C 301 (A,119,109)	CEJQ100M50	C 651 (A,120,81)	CKSRYB105K10
	C 302 (A,119,102)	CEJQ100M50	C 653 (A,124,77)	CKSRYB104K16
	C 303 (A,112,109)	CEJQ100M50	C 702 (B,141,27)	CKSRYB104K16
	C 304 (A,112,102)	CEJQ100M50	C 711 (B,94,23)	CKSRYB474K10
	C 305 (A,105,109)	CEJQ100M50	C 712 (B,93,13)	CKSRYB103K50
	C 306 (A,105,102)	CEJQ100M50	C 713 (A,138,19)	CEJQ220M25
	C 321 (A,97,106)	CEJQ220M25	C 751 (A,19,66)	CKSRYB473K50
	C 351 (B,86,121)	CKSRYB474K16	C 752 (A,15,75)	CKSRYB102K50
	C 352 (B,84,121)	CKSRYB474K16	C 753 (A,25,75)	CEJQ221M10
D	C 353 (B,89,121)	CKSRYB474K16	C 821 (A,50,45)	CKSRYB473K50
	C 354 (B,91,121)	CKSRYB474K16	C 831 (A,88,9)	CKSRYF104Z50
	C 356 (A,97,113)	CEJQ100M50	C 842 (B,50,29)	CKSRYB473K50
	C 357 (B,94,125)	CKSQYB225K10	C 851 (B,31,41)	CKSRYB104K16
	C 358 (B,94,121)	CKSQYB225K10	C 852 (A,44,39)	CEJQ470M25
	C 359 (B,79,136)	CKSRYB104K16	C 853 (A,36,39)	CEJQ101M16
	C 360 (A,63,125) 3 300 μ F/16 V	CCH1486	C 854 (B,33,39)	CKSRYB104K16
	C 361 (B,87,125)	CKSQYB474K25	C 855 (A,37,19)	CCSRCH331J50
	C 362 (B,84,125)	CKSQYB474K25	C 856 (B,34,26)	CKSRYB103K50
	C 363 (B,89,125)	CKSQYB474K25	C 857 (A,44,31)	CEJQ470M25
	C 364 (B,92,125)	CKSQYB474K25	C 858 (A,44,22) 4.7 μ F	CCG1111
E	C 367 (A,97,119)	CEHAR330M10	C 872 (B,29,12)	CKSRYB224K10
	C 402 (A,154,113)	CEJQ101M16	C 873 (B,31,12)	CKSRYB104K16
	C 403 (B,163,140)	CKSRYB103K50	C 874 (A,35,13)	CEJQ220M25
	C 404 (A,157,104)	CEJQ470M10	C 881 (B,148,31)	CCSRCH102J50
	C 405 (B,168,105)	CKSRYB103K50	C 882 (B,150,20)	CCSRCH101J50
	C 408 (B,168,109)	CKSRYB103K50	C 883 (B,150,27)	CCSRCH101J50
	C 411 (B,160,93)	CKSRYB224K16	C 884 (A,153,17)	CKSRYB103K50
	C 412 (B,160,91)	CKSRYB224K16	C 885 (A,143,18)	CKSRYB105K10
	C 431 (B,151,77)	CKSYB475K16	C 891 (B,71,101)	CKSRYB224K16
	C 432 (B,152,88)	CKSRYB103K50	C 892 (B,65,103)	CKSRYB103K50
F	C 433 (A,157,89)	CEJQ220M25	C 893 (A,59,101)	CEJQ100M50
	C 451 (A,35,90) 470 μ F/16 V	CCH1339	C 901 (A,38,45) 2 200 μ F/16 V	CCH1405
	C 452 (A,25,91)	CEHAS101M10	C 903 (A,19,48)	CKSRYB103K50
	C 453 (A,16,91)	CKSRYB103K50	C 904 (A,18,57)	CKSRYB104K25

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Circuit Symbol and No.			Part No.		Circuit Symbol and No.			Part No.	
C 905	(A,25,60)		CEJQ101M16		RESISTORS				
C 911	(A,32,80)	100 µF/25 V	CCH1316						
C 912	(A,18,83)		CKSRYB103K50		R 1801	(A,87,32)		RS1/16S222J	A
C 913	(A,25,83)		CEHAS101M10		R 1802	(A,86,32)		RS1/16S222J	
C 921	(B,38,120)		CKSRYB104K25		R 1803	(B,129,39)		RS1/16S333J	
C 931	(A,66,116)		CKSRYB473K50		R 1811	(B,41,26)		RS1/16S103J	
C 932	(A,66,114)		CKSQYB105K16		R 1812	(B,63,30)		RS1/16S333J	
C 941	(A,79,113)		CKSRYB473K50		R 1813	(B,63,28)		RS1/16S103J	
C 951	(B,47,112)		CKSRYB104K25		R 1814	(B,41,24)		RS1/16S102J	
<div>B</div> <div>Unit Number :</div> <div>Unit Name : Keyboard Unit</div>					R 1815	(B,60,28)		RS1/16S332J	
					R 1816	(B,68,27)		RS1/16S102J	
					R 1818	(B,63,32)		RS1/16S103J	
					R 1819	(B,60,32)		RS1/16S222J	
					R 1831	(B,45,11)		RS1/16S681J	B
<div>MISCELLANEOUS</div>					R 1832	(B,36,28)		RS1/16S271J	
					R 1834	(B,35,21)		RS1/16S681J	
					R 1835	(B,45,10)		RS1/16S681J	
					R 1836	(B,26,22)		RS1/16S821J	
					R 1837	(B,28,21)		RS1/16S821J	
IC 1901	(B,95,22)	IC	PEG303A		R 1838	(B,31,28)		RS1/16S821J	
IC 1921	(A,145,26)	IC(P790BT)	PD8172A		R 1840	(B,45,14)		RS1/16S681J	
	(A,145,26)	IC(P7900BT,P8950BT)	PD8171A		R 1841	(B,26,28)		RS1/16S271J	
IC 1931	(A,28,36)	IC	GP1UX31RK						
IC 1951	(B,111,18)	IC	S-1200B33-M5						
Q 1831	(B,38,27)	Transistor	DTC123JU						
Q 1832	(B,33,27)	Digital Transistor	DTC143EUA		R 1843	(B,25,22)		RS1/16S681J	
Q 1833	(B,28,27)	Transistor	DTC123JU		R 1844	(B,45,13)		RS1/16S681J	
Q 1834	(B,39,15)	Transistor	UMD3N		R 1853	(B,20,27)		RS1/16S821J	C
Q 1851	(B,20,30)	Transistor	UMD3N		R 1854	(B,22,27)		RS1/16S821J	
Q 1852	(B,24,27)	Digital Transistor	DTC143EUA		R 1901	(B,84,30)		RS1/16S103J	
Q 1961	(B,116,14)	Transistor	2SC4617		R 1902	(B,80,25)		RS1/16S473J	
Q 1962	(B,120,16)	Transistor	2SD1664		R 1903	(B,78,18)		RS1/16S154J	
D 1831	(A,99,7)	LED	CL-197HB1-D(CDE)		R 1904	(B,80,28)		RAB4C102J	
D 1832	(A,8,36)	LED	CL-197HB1-D(CDE)		R 1905	(B,84,15)		RS1/16S104J	
D 1833	(A,156,6)	LED	CL-197HB1-D(CDE)		R 1906	(B,92,33)		RAB4C473J	
D 1834	(A,137,7)	LED	CL-197HB1-D(CDE)		R 1907	(B,94,10)		RAB4C102J	
D 1835	(A,82,7)	LED	CL-197HB1-D(CDE)		R 1908	(B,101,11)		RS1/16S221J	
D 1836	(A,26,23)	LED	CL-197HB1-D(CDE)		R 1909	(B,96,33)		RAB4C473J	
D 1837	(A,124,7)	LED	CL-197HB1-D(CDE)		R 1910	(B,145,15)		RAB4C101J	D
D 1838	(A,8,10)	LED	CL-197HB1-D(CDE)		R 1911	(A,146,17)		RAB4C101J	
D 1839	(A,110,7)	LED	CL-197HB1-D(CDE)		R 1912	(B,141,15)		RAB4C101J	
D 1840	(A,54,40)	LED	CL-197HB1-D(CDE)		R 1913	(A,104,33)		RS1/16S101J	
D 1841	(A,36,22)	LED	CL-197HB1-D(CDE)		R 1914	(B,152,36)		RS1/16S101J	
D 1842	(A,54,4)	LED	CL-197HB1-D(CDE)		R 1915	(B,137,15)		RAB4C101J	
D 1843	(A,72,22)	LED	CL-197HB1-D(CDE)		R 1916	(A,138,17)		RAB4C101J	
D 1851	(A,16,23)	LED	CL-197HB1-D(CDE)		R 1917	(A,129,18)		RAB4C101J	
D 1901	(B,80,18)	Diode	1SS355		R 1918	(B,141,28)		RAB4C101J	
L 1951	(B,109,13)	Inductor	CTF1617		R 1919	(A,99,32)		RAB4C101J	
L 1961	(B,127,14)	Inductor	CTF1617		R 1920	(B,101,33)		RAB4C101J	
TH1961	(B,114,12)	Thermistor	CCX1037		R 1931	(B,41,39)		RS1/16S101J	E
X 1901	(B,83,19)	Ceramic Resonator	16.000 MHz	CSS1616	R 1932	(B,40,37)		RS1/16S103J	
S 1801	(A,149,7)	Push Switch	CSG1155		R 1933	(B,44,35)		RS1/16S2R2J	
S 1811	(A,54,22)	Switch	CSX1120		R 1951	(B,114,17)		RS1/16S222J	
S 1831	(A,95,7)	Push Switch	CSG1155		R 1961	(B,127,12)		RS1/16S333J	
S 1832	(A,8,39)	Push Switch	CSG1155		R 1962	(B,116,17)		RS1/16S183J	
S 1833	(A,159,7)	Push Switch	CSG1155		R 1963	(B,114,14)		RS1/16S563J	
S 1834	(A,133,7)	Push Switch	CSG1155		R 1964	(B,116,20)		RS1/16S392J	
S 1835	(A,86,7)	Push Switch	CSG1155		R 1965	(A,92,32)		RAB4C101J	
S 1836	(A,26,27)	Push Switch	CSG1155		R 1966	(B,135,20)		RS1/16S5101D	
S 1837	(A,120,7)	Push Switch	CSG1155		R 1967	(B,132,20)		RS1/16S0R0J	F
S 1838	(A,8,6)	Push Switch	CSG1155		CAPACITORS				
S 1839	(A,114,7)	Push Switch	CSG1155						
		OEL Unit	MXS8260						

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Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

C 1831 (A,100,6) CKSRYF104Z50
 C 1832 (A,8,34) CKSRYF104Z50
 C 1833 (A,154,6) CKSRYF104Z50
 C 1834 (A,141,8) CKSRYF104Z50
 C 1835 (A,81,7) CKSRYF104Z50

R 1 (A,22,12)
 R 2 (A,32,32)
 R 3 (A,35,26)
 R 4 (A,28,29)
 R 5 (A,20,24)

RS1/16S334J
 RS1/16S103J
 RS1/16S473J
 RS1/16S103J
 RS1/16S103J

C 1836 (A,26,21) CKSRYF104Z50
 C 1837 (A,125,6) CKSRYF104Z50
 C 1838 (A,8,12) CKSRYF104Z50
 C 1839 (A,109,6) CKSRYF104Z50
 C 1840 (A,58,40) CKSRYF104Z50

R 7 (A,35,23)
 R 8 (A,32,23)
 R 9 (A,32,20)
 R 21 (A,33,39)
 R 22 (B,21,38)

RS1/16S103J
 RS1/16S101J
 RS1/16S103J
 RS1/16S101J
 RS1/16S473J

C 1841 (A,35,23) CKSRYF104Z50
 C 1842 (A,51,5) CKSRYF104Z50
 C 1843 (A,74,23) CKSRYF104Z50
 C 1851 (A,15,23) CKSRYF104Z50
 C 1901 (A,89,22) CKSRYB103K50

R 23 (A,23,37)
 R 24 (B,24,40)
 R 25 (A,24,40)
 R 26 (A,21,41)
 R 27 (A,21,43)

RS1/16S473J
 RS1/16S101J
 RS1/16S101J
 RS1/16S332J
 RS1/16S105J

C 1902 (B,77,18) CKSRYF104Z50
 C 1903 (B,107,20) CKSRYB103K50
 C 1921 (B,152,31) CKSRYB103K50
 C 1931 (B,38,37) CKSYB106K10
 C 1951 (B,111,20) CKSRYB105K10

R 28 (B,20,43)
 R 29 (B,20,40)
 R 36 (A,15,5)
 R 37 (A,14,7)
 R 41 (A,8,22)

RS1/16S332J
 RS1/16S105J
 RS1/16S103J
 RS1/16S104J
 RS1/16S103J

C 1952 (B,111,15) CKSRYB105K10
 C 1953 (B,108,15) CKSRYB105K10
 C 1963 (A,112,24) CKSRYB104K25
 C 1964 (B,119,20) CKSRYB104K25
 C 1965 (B,121,20) CKSRYB104K25

R 43 (A,10,21)
 R 44 (A,8,20)
 R 45 (A,14,21)
 R 46 (A,4,18)
 R 47 (A,16,15)

RS1/16S393J
 RS1/16S393J
 RAB4C101J
 RS1/16S103J
 RS1/16S203J

C 1966 (B,126,20) CKSRYB104K25

R 48 (A,18,18)
 R 49 (A,7,8)
 R 50 (A,14,8)
 R 51 (A,20,28)
 R 52 (A,7,5)

RS1/16S223J
 RS1/16S203J
 RS1/16S473J
 RS1/16S105J
 RS1/16S223J

D**Unit Number : CWN2339****Unit Name : Bluetooth Unit****MISCELLANEOUS**

IC 21 (A,29,43) IC TC74VHC02FTS1
 IC 22 (A,23,43) IC TC7PAU04FU
 IC 23 (B,22,40) IC TC7PAU04FU
 IC 36 (A,11,14) IC AK2301A
 IC 51 (A,16,27) IC AN6123MS

R 57 (B,15,15)
 R 58 (A,30,36)
 R 66 (B,18,21)
 R 67 (B,16,24)
 R 68 (B,12,19)

RAB4C101J
 RS1/16S821J
 RS1/16S103J
 RS1/16S103J
 RS1/16S473J

IC 56 (B,10,13) IC PCM1742KE
 IC 66 (B,12,21) IC NJM4558V
 Q 1 (A,30,13) Chip Transistor DTC124EUA
 Q 2 (A,34,29) Chip Transistor DTC124EUA
 Q 21 (B,27,40) Transistor UMD2N

R 69 (B,11,24)
 R 70 (B,7,24)
 R 71 (B,9,19)
 R 72 (B,3,17)
 R 73 (B,5,19)

RS1/16S103J
 RS1/16S103J
 RS1/16S473J
 RS1/16S103J
 RS1/16S103J

Q 22 (B,31,43) Chip Transistor DTC124EUA
 Q 23 (B,27,43) Transistor UMD2N
 Q 36 (A,17,8) Chip Transistor DTC124EUA
 Q 37 (A,16,12) Chip Transistor DTC124EUA
 L 1 (A,23,24) Inductor CTF1394

R 76 (A,4,30)
 R 77 (B,5,31)
 R 78 (A,6,32)
 R 79 (B,11,32)
 R 80 (A,3,33)

RS1/16S101J
 RS1/16S101J
 RS1/16S101J
 RS1/16S0R0J
 RS1/16S101J

L 21 (A,26,39) Inductor CTF1379
 L 22 (A,23,40) Inductor CTF1379
 L 23 (B,23,44) Inductor CTF1379
 L 36 (A,5,11) Inductor LCYC2R2K1608
 L 51 (A,11,32) Inductor CTF1379

R 81 (B,10,29)
 R 82 (B,16,29)
 R 83 (B,9,32)
 R 84 (B,16,31)
 R 85 (B,9,39)

RS1/16S101J
 RS1/16S101J
 RS1/16S101J
 RS1/16S0R0J
 RS1/16S101J

L 56 (B,17,7) Inductor CTF1379
 L 57 (B,12,9) Inductor CTF1379
 X 21 (A,19,41) Oscillator 11.289 6 MHz CSS1670
 X 22 (B,18,42) Oscillator 12.288 MHz CSS1698
 Y 1 (B,27,21) Bluetooth Module CWX3466

R 86 (B,6,39)
 R 87 (B,12,39)

RAB4C101J
 RAB4C101J

CAPACITORS

C 1 (A,28,12)
 C 4 (A,26,21)
 C 5 (A,22,16)
 C 7 (A,25,13)
 C 8 (A,23,21)

CKSRYB104K16
 CSZS100M16
 CKSRYB104K16
 CSZS1R0M16
 CKSRYB104K16

RESISTORS

1

2

3

4

5	Circuit Symbol and No.	Part No.
C 9	(A,23,19)	CKSRYB104K16
C 10	(A,22,15)	CCSRCH101J50
C 21	(A,28,40)	CKSRYB104K16
C 22	(A,21,38)	CKSRYB105K10
C 23	(A,19,37)	CCSRCH120J50
C 24	(A,19,45)	CCSRCH120J50
C 25	(B,23,43)	CKSRYB105K10
C 26	(B,15,42)	CCSRCH120J50
C 27	(B,17,38)	CCSRCH120J50
C 28	(A,27,36)	CKSRYB102K50
C 36	(A,3,15)	CKSYB106K6R3
C 37	(A,5,15)	CKSRYB104K16
C 38	(A,10,22)	CKSRYB105K10
C 41	(A,10,19)	CCSRCH101J50
C 42	(A,7,20)	CKSRYB105K10
C 43	(A,4,20)	CKSRYB105K10
C 44	(A,11,8)	CKSRYB334K10
C 45	(A,12,5)	CKSRYB105K10
C 46	(A,16,17)	CCSRCH101J50
C 47	(A,7,7)	CCSRCH101J50
C 48	(A,9,5)	CKSRYB105K10
C 49	(A,9,8)	CKSRYB105K10
C 50	(A,17,20)	CKSRYB105K10
C 51	(A,19,24)	CKSRYB334K10
C 52	(A,16,24)	CCSRCH331J50
C 53	(A,19,29)	CKSYB106K6R3
C 54	(A,15,30)	CKSRYB105K10
C 55	(A,13,29)	CKSRYB104K16
C 56	(B,8,7)	CKSYB106K6R3
C 57	(B,15,12)	CKSRYB102K50
C 58	(B,16,11)	CKSYB106K6R3
C 59	(B,14,9)	CKSRYB102K50
C 60	(B,10,7)	CKSYB106K6R3
C 61	(B,14,6)	CKSRYB102K50
C 66	(B,16,18)	CKSYB475K16
C 67	(B,9,17)	CKSYB475K16
C 68	(B,16,21)	CCSRCH221J50
C 69	(B,16,26)	CCSRCH391J50
C 70	(B,9,26)	CKSYB106K6R3
C 71	(B,6,25)	CKSRYB105K10
C 72	(B,4,19)	CCSRCH391J50
C 73	(B,7,20)	CCSRCH221J50
C 76	(A,13,45)	CKSRYB102K50

E

Unit Number : CWN2634

Unit Name : Antenna Unit

ANT1101 BT Antenna CWX3132

F

Unit Number : CWS1389

Unit Name : Switch Unit

S 1 (B,7,14) Switch(OPEN) CSN1051
S 2 (B,29,12) Switch(CLOSE) CSN1052

C

Unit Number : CWX3514

7	Circuit Symbol and No.	Part No.
Unit Name : CD Core		
Unit(S10.5COMP2)		
MISCELLANEOUS		
IC 201	(A,34,46) IC	PE5547A
IC 301	(A,27,14) IC	BA5839FP
Q 101	(B,56,72) Transistor	2SA1577
Q 102	(B,47,57) Transistor	2SB1689
X 201	(A,23,35) Ceramic Resonator 16.934 MHz	CSS1603
S 901	(A,53,37) Switch(HOME)	CSN1067
S 903	(B,19,58) Switch(DSCSNS)	CSN1067
S 904	(B,38,67) Switch(12EJ)	CSN1068
S 905	(B,24,68) Switch(8EJ)	CSN1068

RESISTORS

R 101	(B,60,73)	RS1/10SR2R4J
R 102	(B,59,71)	RS1/10SR2R4J
R 103	(B,60,71)	RS1/10SR2R7J
R 104	(B,52,69)	RS1/16SS222J
R 105	(B,41,57)	RS1/16SS102J
R 107	(B,41,59)	RS1/16SS105J
R 202	(B,32,62)	RS1/16SS473J
R 203	(B,42,45)	RS1/16S473J
R 204	(A,25,61)	RS1/16SS221J
R 206	(B,26,53)	RS1/16SS104J
R 210	(B,13,32)	RS1/16SS102J
R 214	(B,36,34)	RS1/16SS472J
R 216	(B,47,49)	RS1/16SS472J
R 221	(B,36,32)	RS1/16SS103J
R 222	(B,35,32)	RS1/16SS103J
R 225	(A,49,49)	RS1/16SS103J
R 226	(A,49,50)	RS1/16SS393J
R 227	(B,45,51)	RS1/16SS562J
R 228	(B,42,53)	RS1/16SS122J
R 229	(B,44,53)	RS1/16SS472J
R 230	(B,21,28)	RS1/16SS0R0J
R 232	(B,43,51)	RS1/16SS122J
R 233	(B,29,52)	RS1/16SS103J
R 234	(B,30,61)	RS1/16SS473J
R 235	(A,25,63)	RS1/16SS473J
R 239	(B,26,48)	RS1/16SS473J
R 240	(B,10,31)	RS1/16SS473J
R 241	(B,9,32)	RS1/16SS103J
R 244	(A,20,52)	RS1/16SS473J
R 255	(A,27,63)	RAB4CQ104J
R 307	(A,34,19)	RS1/16SS183J
R 308	(A,38,20)	RS1/16SS183J
R 309	(A,35,21)	RS1/16SS183J

R 310	(A,38,21)	RS1/16SS183J
R 601	(B,28,38)	RS1/16SS0R0J
R 602	(B,27,41)	RS1/16SS0R0J
R 606	(B,23,41)	RS1/16SS0R0J
R 701	(B,16,35)	RS1/16SS221J
R 702	(A,23,55)	RS1/16SS221J

CAPACITORS

C 106	(B,56,69)	CKSQYB475K6R3
C 202	(A,27,57)	CKSSYB104K10

Circuit Symbol and No.

Part No.

A

C 204	(A,24,63)	CKSSYB103K16
C 205	(B,23,43)	CKSQYB475K6R3
C 206	(A,22,39)	CKSSYB104K10
C 207	(A,24,37)	CKSRYB104K16
C 209	(B,33,40)	CEVW220M6R3
C 210	(B,29,42)	CKSSYB104K10
C 211	(A,27,34)	CKSSYB104K10

B

C 212	(B,29,32)	CKSRYB104K16
C 213	(A,44,37)	CKSSYB104K10
C 214	(A,28,33)	CKSSYB104K10
C 216	(A,50,51)	CKSSYB332K50
C 217	(A,46,51)	CKSSYB104K10

B

C 218	(A,49,51)	CKSSYB473K10
C 219	(A,45,53)	CKSSYB104K10
C 220	(A,46,53)	CKSSYB182K50
C 221	(A,44,53)	CKSSYB104K10
C 222	(B,43,53)	CCSSCH560J50

C

C 223	(B,45,53)	CCSSCH4R0C50
C 224	(A,43,55)	CKSSYB104K10
C 226	(A,40,58)	CCSSCH680J50
C 227	(A,40,60)	CCSSCH470J50
C 228	(A,39,62)	CKSSYB103K16

C

C 229	(B,49,59)	CKSSYB104K10
C 236	(A,42,61)	CKSSYB104K10
C 239	(B,44,51)	CCSSCH220J50
C 240	(A,35,61)	CKSSYB104K10
C 250	(B,36,30)	CKSSYB102K50

D

C 251	(B,33,29)	CKSSYB102K50
C 303	(A,35,19)	CKSSYB472K25
C 304	(A,34,21)	CKSSYB223K16
C 307	(B,25,9)	CKSRYB104K16
C 308	(B,10,27)	CKSRYB105K10

C 703	(B,11,37)	CCSSCH101J50
C 704	(B,8,36)	CKSSYB102K50
C 711	(A,25,26)	CKSSYB104K10

D

Miscellaneous Parts List

M 1	Pickup Unit(P10.5)(Service)	CXX1942
M 1	Motor Unit(SPINDLE)	CXC7134
M 2	Motor Unit(LOADING/CARRIAGE)	CXC4026
M 3	Motor Unit(FLAP)	XXA7400

E

F

F

6. ADJUSTMENT

6.1 CD ADJUSTMENT

1) Cautions on adjustments

- In this product the single voltage (3.3 V) is used for the regulator. The reference voltage is the REFO1 (1.65 V) instead of the GND.

If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:

- a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.
- b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.
- c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

- Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.
- For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.
- In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.
- The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.
- The load and eject operation is not guaranteed with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.

- To enter the test mode.
While pressing the [LIST] and [CLK] keys at the same time, reset.

- To exit from the test mode.
Turn off the ACC and back up.

Notes:

- a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.
- b. If you have pressed the [→] key or [←] key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.
- c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.
- d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.
- e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0 dB, and the auto-adjustment values are reset to the default settings.

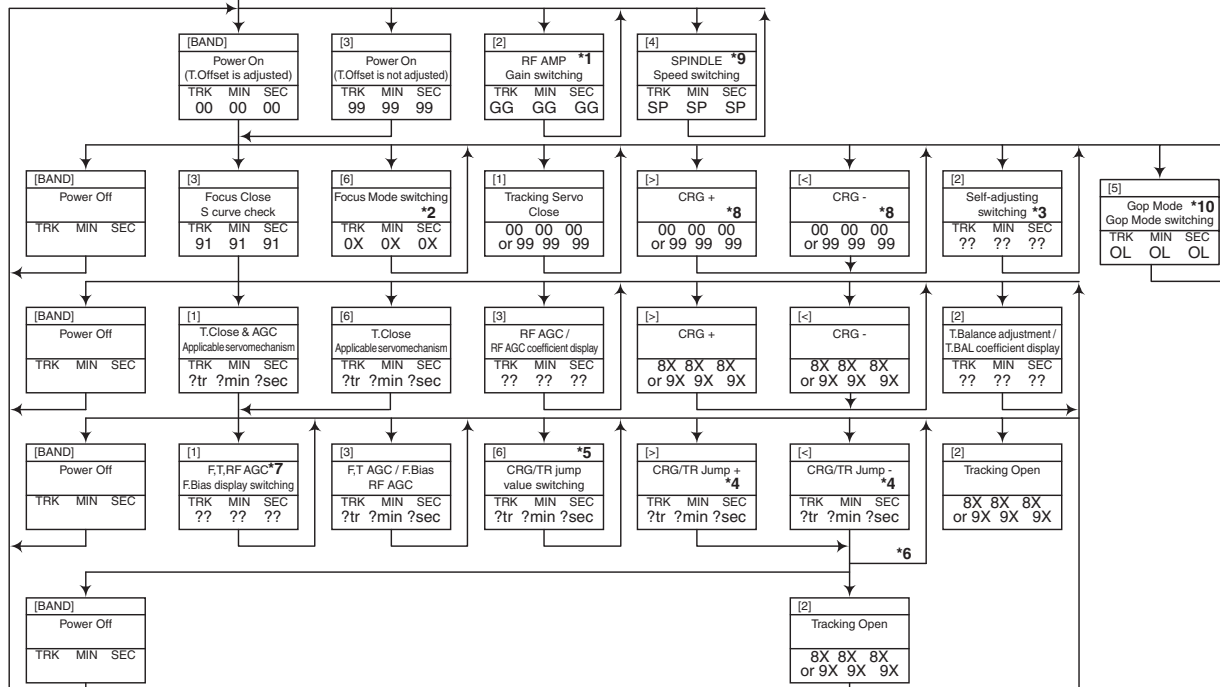
Flow Chart

[Key]
Contents
Display

[LIST] + [CLK] + Reset or [LIST] + [CLK] + BU + ACC Test Mode In
--

[1] to [6] keys : Remote Control Unit

[CD] or [SOURCE]
Source On
TRK MIN SEC



*1) TYP → + 6 dB → + 12 dB
TRK MIN SEC → TRK₀₆MIN₀₆SEC₀₆ → TRK₁₂MIN₁₂SEC₁₂

*2) Focus Close → S Curve check setting → F EQ measurement setting
TRK₀₀MIN₀₀SEC₀₀ → TRK₀₁MIN₀₁SEC₀₁ → TRK₀₂MIN₀₂SEC₀₂
(TRK₉₉MIN₉₉SEC₉₉)

*3) F.Offset Display → RF.Offset → T.Offset Display → Switch to the order of the original display

*4) 1TR/4TR/10TR/32TR/100TR

*5) Single → 4TR → 10TR → 32TR → 100TR → CRG Move
9x(8x):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)

*6) Only at the time of CRG move, 100TR jump

*7) TRK/MIN/SEC → F.AGC → T.AGC Gain → F.Bias → RF AGC

*8) CRG motor voltage = 2 [V]

*9) TYP (1X) → 2X → 1X
TRK MIN SEC → TRK₂₂MIN₂₂SEC₂₂ → TRK₁₁MIN₁₁SEC₁₁

*10) OFF(TYP) → FORCUS → TRACKING
TRK MIN SEC → TRK₇₀MIN₇₀SEC₇₀ → TRK₇₁MIN₇₁SEC₇₁

• As for the double speed (2x), audio output cannot be supported

*) • After the [EJECT] key is pressed keys other than the [EJECT] key should not be pressed, until disc ejection is complete.

• When the key [2] or [3] is pressed during the Focus Search, the power supply should be immediately turned off (otherwise the lens sticks to Wall, causing the actuator to be damaged).

• In the case of TR jump other than to 100TR, the function shall continue to be processed even if the TR jump key is released. As for the CRG Move and 100TR Jump, the mechanism shall be set to the Tracking Close mode when the key is released.

• When the power is turned on/off the jump mode is reset to the Single TR (91) while the gain of the RFAMP is reset to 0 dB. At the same time all the self-adjusting values shall return to the default setting.

[Key]	Operation
	Test Mode
[BAND]	Power On/Off
[>]	CRG + / TR Jump + (Direction of the external surface)
[<]	CRG - / TR Jump - (Direction of the internal surface)
[1]	T. CLS & AGC & Applicable servomechanism / AGC, AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T. Open
[3]	F. Close, S Curve / Rough Servo and RF AGC / F.T, RF AGC
[4]	SPDL 1X/2X switching As for the double speed(2x), audio output <u>cannot</u> be supported.
[5]	Error Rate measurement ON : ERR 30 Counts Start BER display data[%]
[6]	F. Mode switching / Tracking Close / CRG • TR Jump Switching

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT



• Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• Purpose :

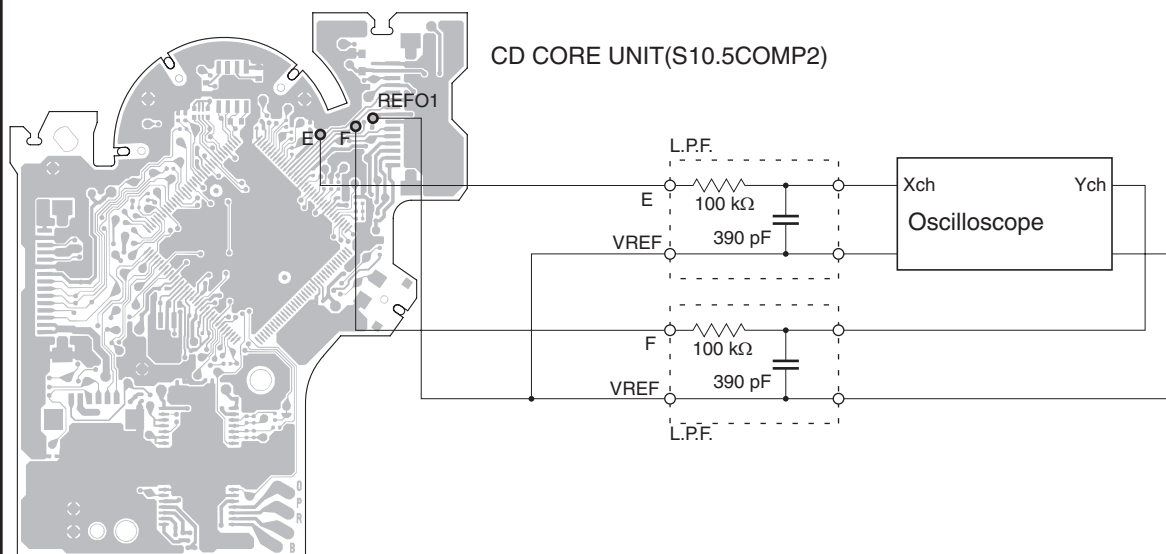
To check that the grating is within an acceptable range when the PU unit is changed.

• Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• Method :

- | | |
|-----------------------|----------------------------|
| • Measuring Equipment | • Oscilloscope, Two L.P.F. |
| • Measuring Points | • E, F, REFO1 |
| • Disc | • TCD-782 |
| • Mode | • TEST MODE |



• Checking Procedure

1. In test mode, load the disc and switch the 3 V regulator on.
2. Using the [→] and [←] buttons, move the PU unit to the innermost track.
3. Press key [3] to close focus, the display should read "91". Press key [2] to implement the tracking balance adjustment the display should now read "81". Press key [3]. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

• Note

Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• Hint

Reloading the disc changes the clamp position and may decrease the "wobble".

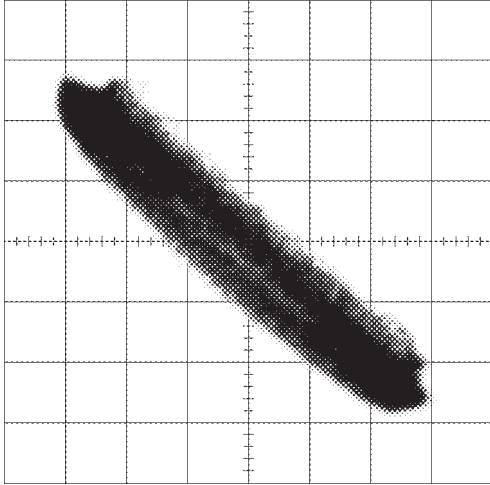
Grating waveform

Ech → Xch 20 mV/div, AC

Fch → Ych 20 mV/div, AC

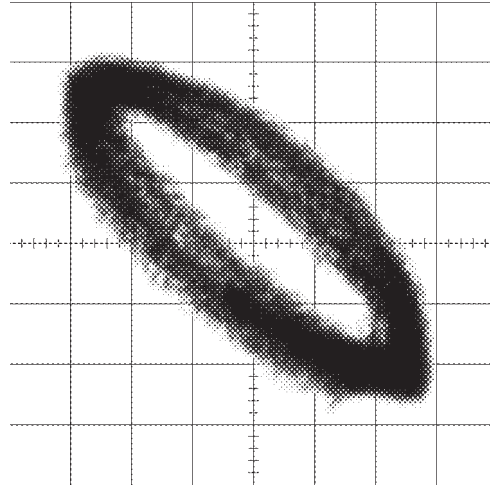
A

0°



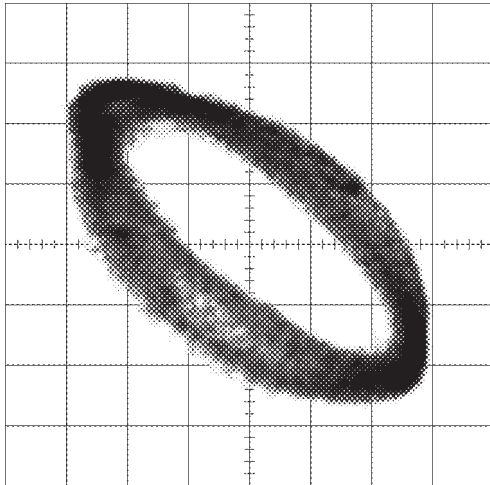
B

30°



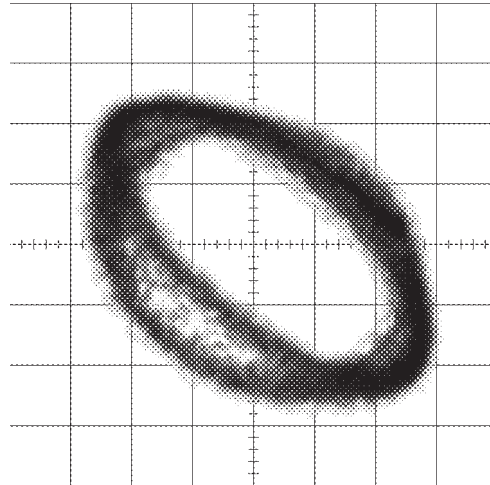
C

45°



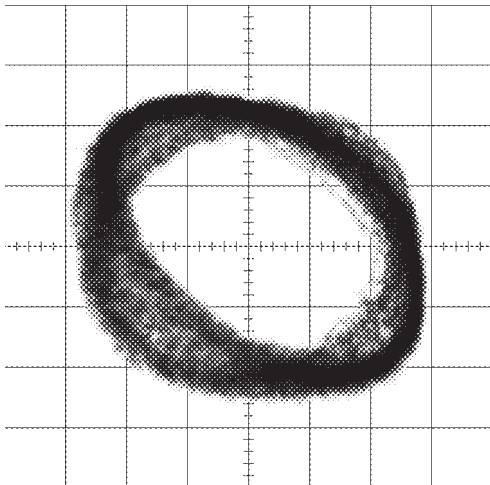
D

60°



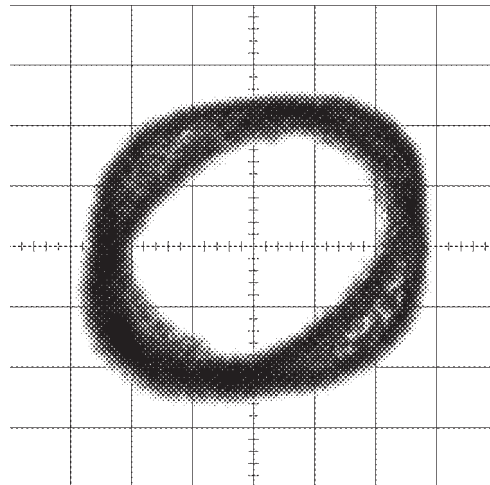
E

75°



F

90°



6.3 ERROR MODE

If this product is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR - xx	ERR - xx	E - xx

(2) CD Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Com- munication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

Bluetooth Error Code List

Code		Displayed error code	Description of the code and potential cause(s)
10	Built-in Bluetooth	Bluetooth communication failure	Initial communication on Bluetooth unit was failed. --> Failure on lines related to communication (BTPW, BTRST, BTTEST, BTRX, BTRTS and BTCTS). Failure on Bluetooth unit.
80	Built-in Bluetooth	Flash memory Communication failure	Communication on Flash Memory for phone book was failed. --> Failure on lines related to communication (BTPW, MEMDI, MEMD0, MEMCK). Failure on Flash Memory. Degradation by rewrite time consumption.

6.4 TEST MODE (iPod)

[Purpose of this test mode]

This is a specialized mode that aims to check malfunction condition of H/U and measure the product performance.

[Action during this Test Mode]

- Enables switching at any time to the iPod source
- Disables communication with iPod
- Disables indication of logos (Pioneer) on iPod
- Functions regardless of connection of the iPod body to H/U

[How to shift to test mode]

- The following describes how to enter and display the test mode.
- ① Press [LIST + CLK key] together to reset and start the test mode.
 - ↓
 - ② Press such as the [SOURCE] key to switch to the iPod source.
 - ↓
 - ③ Bring to the state where title information is displayed by pressing DISP key.

[Cancellation of test mode]

- The test mode is cancelled by executing any of the following.
- ACC_OFF *This applies to the case that the test mode is set to be cancelled with ACC_OFF.
 - B. Up_OFF
 - Pressing the H/U reset button

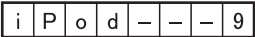
[Operational specifications for test mode]

The following specifies the key allocation and the actions.

Key	Action	Default	Remarks
→	Switches ON/OFF the charging circuit to iPod.	ON	

[On-screen image]

The following are the on-screen display images.
The following are displayed as title information.



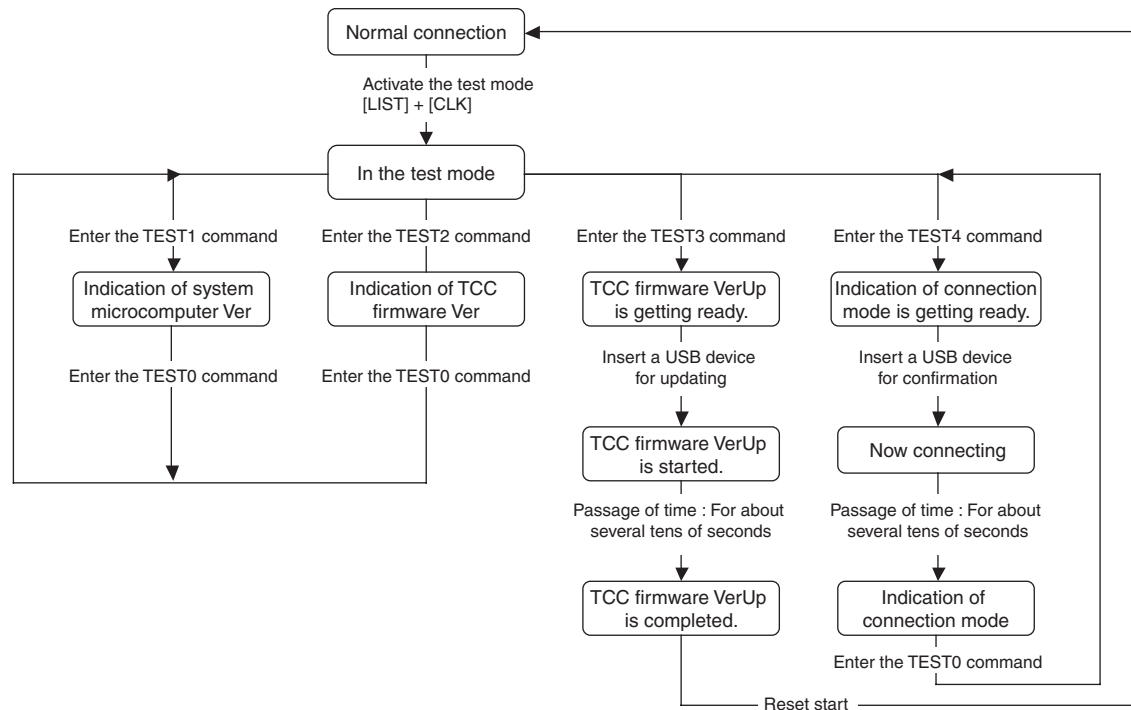
— The state of ON/OFF on the charging circuit (1: ON, 0: OFF)

6.5 TEST MODE (USB)

● Implemented functions

TEST1 command	Right key
TEST2 command	Left key
TEST3 command	LIST key
TEST4 command	DISP key
TEST0 command	BAND/ESC key

- Indication of system microcomputer Ver
- Indication of TCC firmware Ver
- To enter the TCC firmware UpDate mode:
 - Set this mode and insert a USB device having the UpDate program to start rewriting the device.
 - * If you carry out the TEST 3 command with the USB device inserted, a correct result is not displayed.
- Confirmation on connection mode (mass storage class connection)
 - Set this mode and insert a USB device. Then, the connection mode is displayed.
 - * Do not insert a USB device having the UpDate program.
 - * If you carry out the TEST 4 command with the USB device inserted, a correct result is not displayed.
 - Be sure to insert a USB device when "DeviceIn" is being displayed.



● Indications

Indication of system microcomputer Ver
Indication of TCC firmware Ver

V e r * . * *
V e r * . * *

TCC firmware VerUp is getting ready.
TCC firmware VerUp is started.
TCC firmware VerUp is completed.

MIN	SEC	SEC
R E A D Y	0 0 0	0
U P D T	0 0 0	
C O M P L E T E		

Displays 0:00 to 5:00 (in increments of minutes and seconds)
Displays 0:00 to 5:00 (in increments of minutes and seconds)
* The time increment stops when it reaches 5:00.

Confirmation on connection mode is getting ready.
Now connecting
Indication of connection mode

D e v i c e I n
C o n n e c t
M S C

When a device supporting mass storage class is connected:

1234

6.6 SYSTEM MICROCOMPUTER TEST PROGRAM



● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 86) terminal to H.

The clock signal is output from the PCL terminal IC601(Pin 41).

The frequency of the clock signal is 625.000 kHz that is one 32th of the fundamental frequency.

The clock signal should be 625.000 kHz(±25 Hz).

If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

B

C

D

E

F

6.7 TEST MODE (Bluetooth)

● About Memory Clear

When resetting the microprocessor, the memory is initialized except for the following five items. This enables user to avoid the task of registering phones and transferring phone directory again even after resetting system at the time of battery exchange, etc.

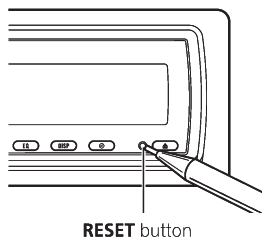
- phone book entries on the Bluetooth telephone
- preset numbers on the Bluetooth telephone
- registration assignment of Bluetooth telephone
- call history of Bluetooth telephone
- history of the most recently connected Bluetooth audio

Resetting the microprocessor

The microprocessor must be reset under the following conditions:

- Prior to using this unit for the first time after installation
- If the unit fails to operate properly
- When strange or incorrect messages appear on the display

- **Press RESET with a pen tip or other pointed instrument.**



Resetting the Bluetooth wireless technology module

Bluetooth telephone and Bluetooth Audio data can be deleted. To protect personal information, we recommend deleting this data before transferring the unit to other persons. The following settings will be deleted.

- phone book entries on the Bluetooth telephone
- preset numbers on the Bluetooth telephone
- registration assignment of Bluetooth telephone
- call history of Bluetooth telephone
- history of the most recently connected Bluetooth audio

1 Use MULTI-CONTROL to select BT reset.

2 Push MULTI-CONTROL right to show a confirmation display.

Clear memory YES is displayed. Clearing memory is now on standby.

- If you do not want to reset phone memory, push **MULTI-CONTROL** left. The display reverts.

3 Press MULTI-CONTROL to clear the memory.

Cleared is displayed and the settings are deleted. ■

● Bluetooth Test Mode (when using BT-compliant mobile phone)

Specifications for BT Built-in mobile phone

The mobile phone compliant to Bluetooth Ver 1.1 requires at least *HFP and *OPP to be mounted.

The model having validly accomplished connecting verification is desirable. [CDMA A5504T(TOSHIBA), 6230(Nokia)etc.]

The model capable of being in standby state is desirable.

1. Cautions

*These cautions are for the case where mobile phone is actually connected at the service site.

When the mobile phone is actually connected for checking action or the like and the model is registered at the service site, returning the unit directly to user will leave the telephone information on it which had been registered at the service site. Thus, in such case, the task to clear only the telephone information used at the service will be required from the FUNCTION menu.

[Important]

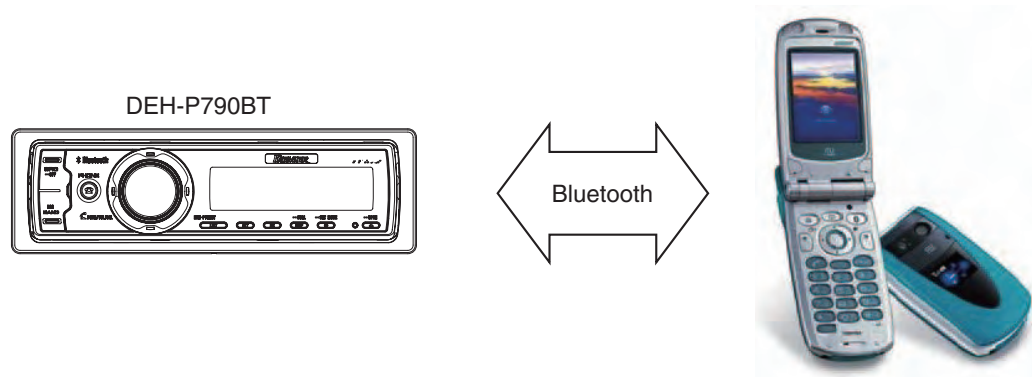
When the mobile phone is actually connected to the registration number of which a user has already registered among available No.1 through 3 for registration, take note that the telephone information having registered by user will be overwritten.

2. Outline of Functions

The following 2 items are to be confirmed for the simple BT action check by using BT-compliant mobile phone:

- Confirmation of Bluetooth connection (certification connection and voice connection)
- Confirmation of BT antenna sensitivity (connection)

3. Configuration Diagram



4. How to Start-up the Test Mode

Specifications for Operation

Operation method

Test mode starts by RESET while pressing EQ+DISP keys simultaneously.

```

TEST  - BT&FLASH TEST -
:
ANTENNA      :
SOUND STATE  :
FLASH MEMORY :
  
```



After a few seconds, shift to the standby mode

```

TEST  - BT&FLASH TEST -
CONNECT WAITING
ANTENNA      :
SOUND STATE  :
FLASH MEMORY :
  
```



After starting environment search on BT mobile phone side, connecting action (enter PIN code)

Connection completed and the value displayed on the antenna sensitivity part

```

TEST  - BT&FLASH TEST -
BT TEL
ANTENNA      : - 35
SOUND STATE  : OFF
FLASH MEMORY :
  
```

A: Antenna sensitivity, F: Flash test

***** indicates the name of mobile phone

▲▲: Antenna sensibility value

The value is only a criterion. When the mobile phone is placed nearest in the front of the product, the value indicates somewhere between 30 and 60. Other than this value or the absence of indication refers to the defective BT antenna connection.

Bluetooth Test Mode (when using 2.4 GHz-compliant spectrum analyzer)

1. Cautions

* When the service site has a 2.4 GHz-compliant spectrum analyzer, the peripheral facilities shown below are also required.

Also, the antenna terminal on BT unit must be directly connected to the cable.

A gray coaxial cable connected to the antenna connector on BT unit is removed by taking out the upper case and CD mechanics of the product.

This task would be safer if a special connector-drawing jig is available.

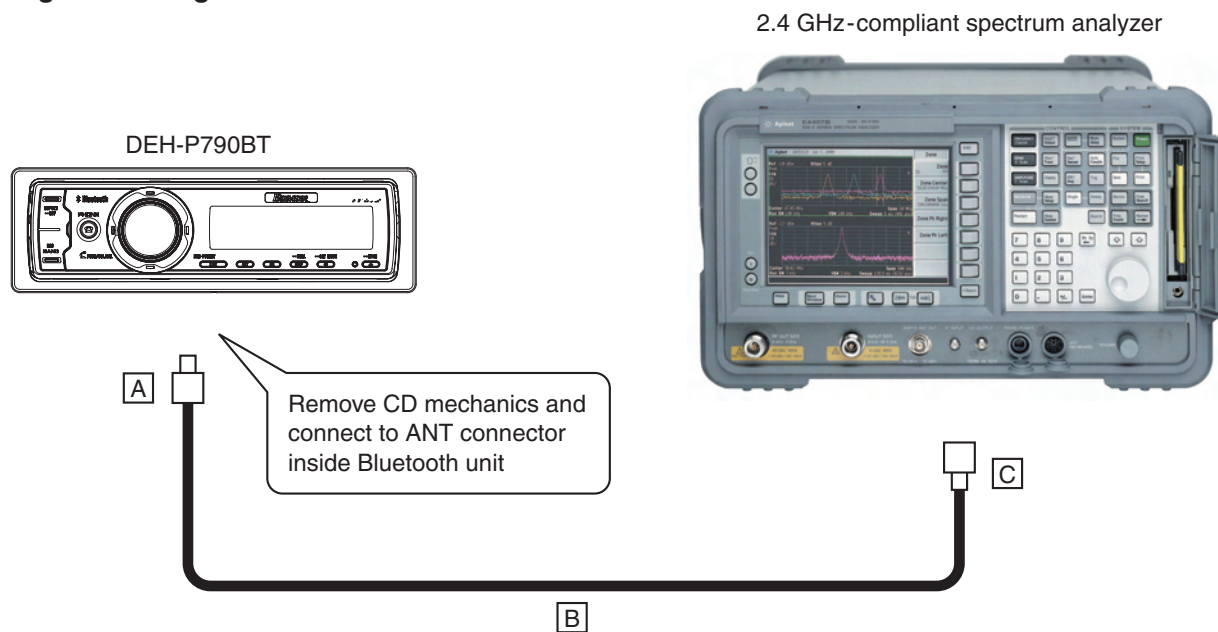
Next, the U.FL connector from spectrum analyzer is connected. The styling of cable must be taken good care so as not to add further burden on BT antenna connector and to break it.

2. Outline of Functions

The following confirmation is to be conducted by test mode in order to simply check BT actions using 2.4 GHz-compliant spectrum analyzer.

* Confirmation of output level of Bluetooth unit

3. Configuration Diagram



Operation method

After Reset Start while pressing LIST+CLOCK keys simultaneously, start BT Test Mode by PHONE key.

↓ PHONE

```

TEST  - WIRELESS TEST -
      SETTING...
LOOP BACK
  
```

PEE Sound 1 rings and "LOOP BACK" is displayed.

Select Mode by right & left keys. Select LOC TX NM (data non-modulation).

↓

```

TEST  - WIRELESS TEST -
      SETTING...
LOCAL TX NM
  
```

Determine by Center key and select frequency. Initial value is 2 402 MHz.

Select frequency by Up & Down keys. Initial value is 2 402 MHz.

02:2402<->41:2441<->80:2480<->95:2495

↓

```

TEST  - WIRELESS TEST -
      SETTING...
LOCAL TX
TX FREQ. : 02 - 2402
  
```

↓

Determine by Center key.

Screen displaying LOC TX NM Setup Defined. This is the end of product setup.

```

TEST  - WIRELESS TEST -
      EXECUTE...
LOCAL TX NM
TS: - - HM: - - PT: - -
TX: 02 RX: - - TG: - -
  
```

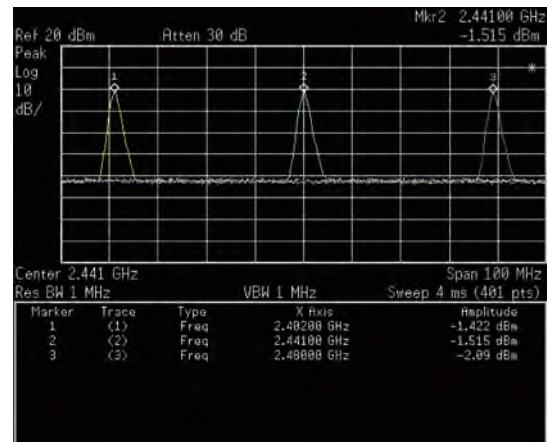
Measure each of 02, 41 and 80.

Return to SEL screen by BAND key.

Determine the output level of each frequency by spectrum analyzer upon the above connection.

The output level V must be within the range of the following as a determination standard:

"-6 dBm<V<4 dBm"



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the CD Mechanism Module (Fig.1)

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

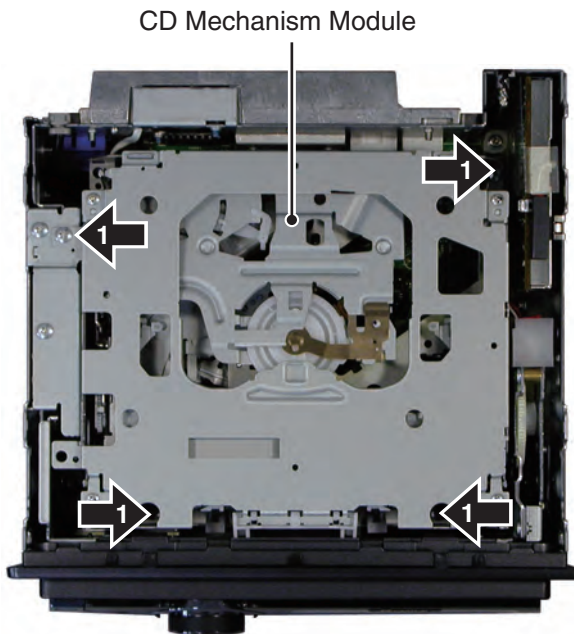


Fig.1

● Removing the Grille Assy (Fig.2)

1 Disconnect the Cord Assy by Jig GGF1539.

2 Remove the four screws.

Disconnect the connector and then remove the Grille Assy.

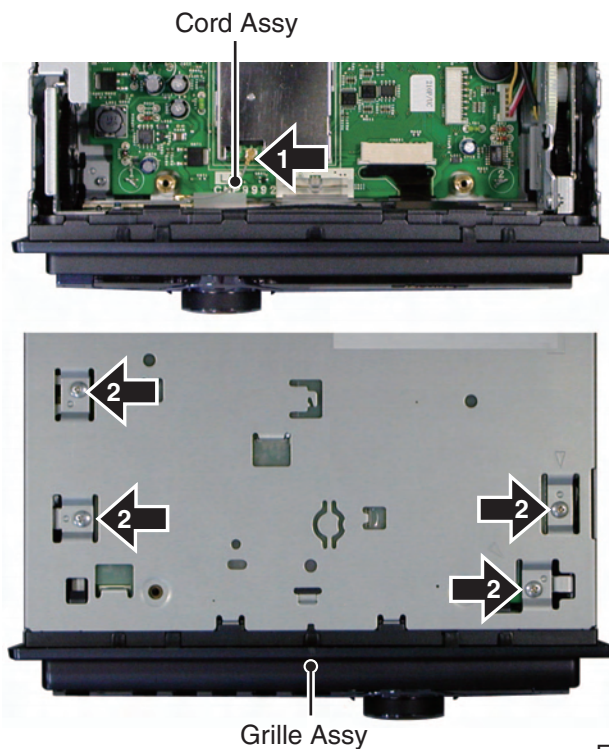


Fig.2

When unplugging the cord assy, make sure to use jig GGF1539.

If the antenna cable is directly unplugged without using jig GGF1539, you might damage your fingertip or fingernail.

● How to Remove the Cord Assy

When unplugging cord assy, hook the point of jig GGF1539 on the lid of cord assy and vertically draw out along with the engagement axis of connector.

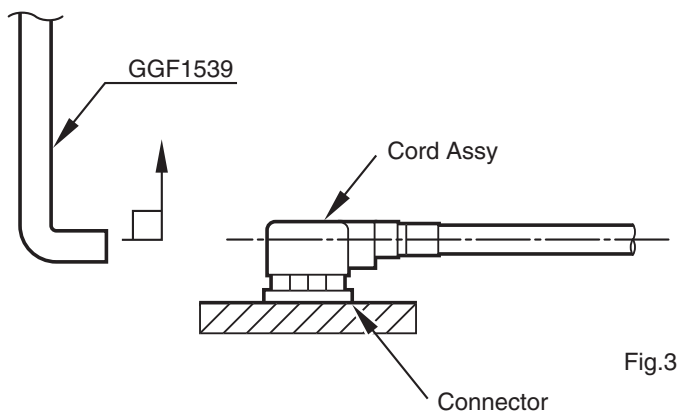


Fig.3

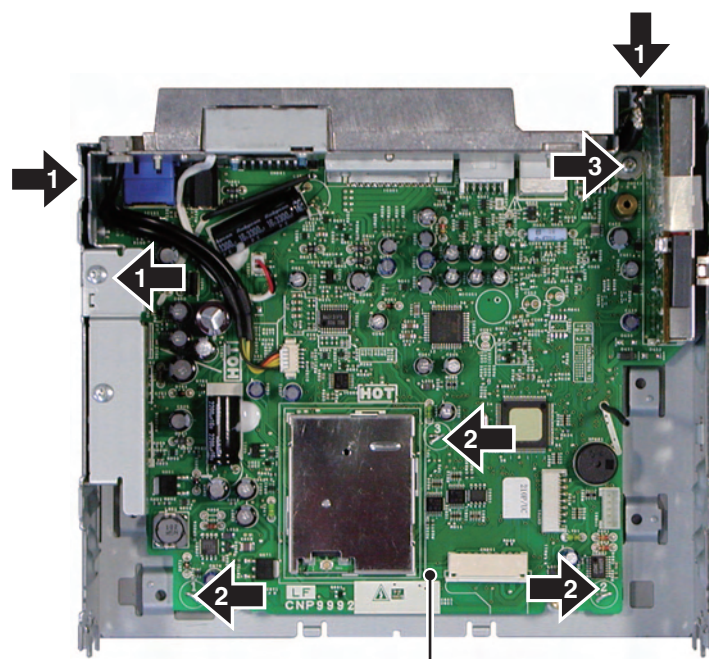
● How to Attach the Cord Assy

For inserting cord assy, adjust cord assy with the engagement axis of connector and insert it as vertically as possible.

Do not insert the cord assy in extreme slant, as the connector might suffer damage.

● Removing the Tuner Amp Unit (Fig.4)

- ➡ 1 Remove the three screws.
- ➡ 2 Straighten the tabs at three locations indicated.
- ➡ 3 Remove the screw and then remove the Tuner Amp Unit.



Tuner Amp Unit

Fig.4

● Removing the Bluetooth Unit (Fig.5)

A **1** Remove the three solders.

Straighten the tabs at three locations indicated and then remove the Bluetooth Unit.

B

C

D

E

F

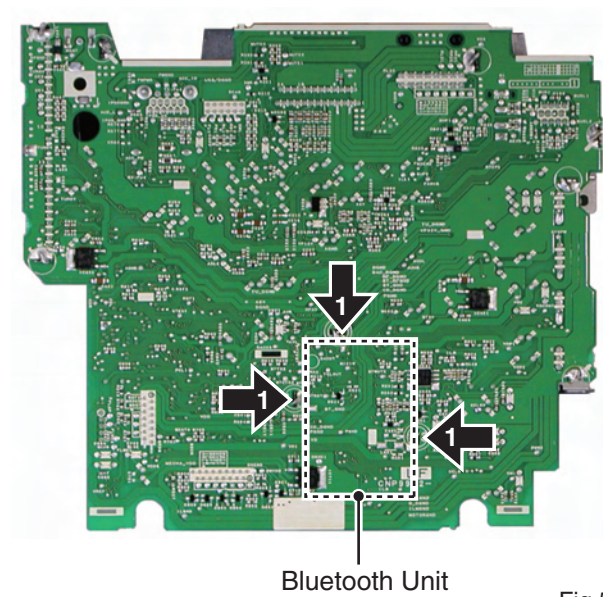
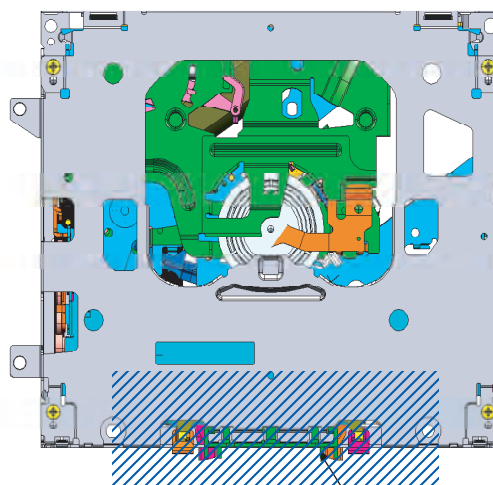


Fig.5

● How to hold the Mechanism Unit

1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.

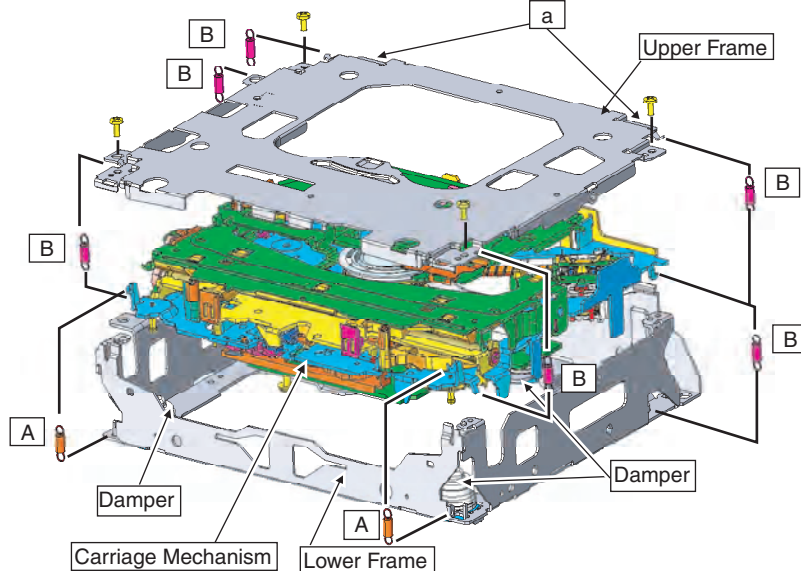


Do not squeeze this area.

● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

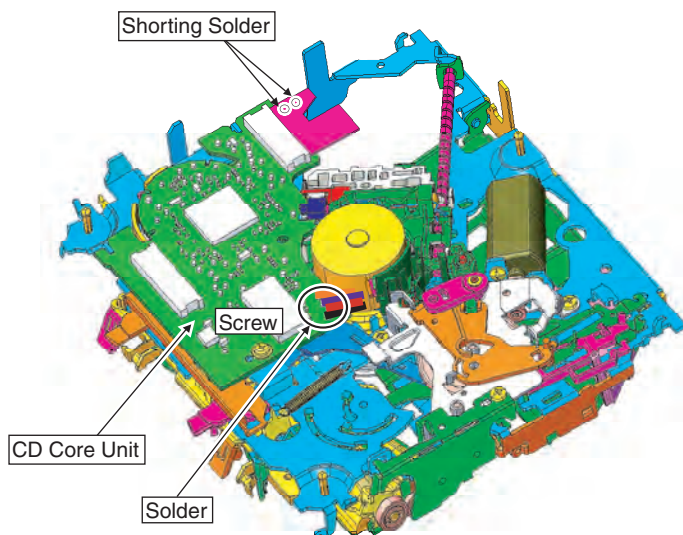
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



● How to remove the CD Core Unit

1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.

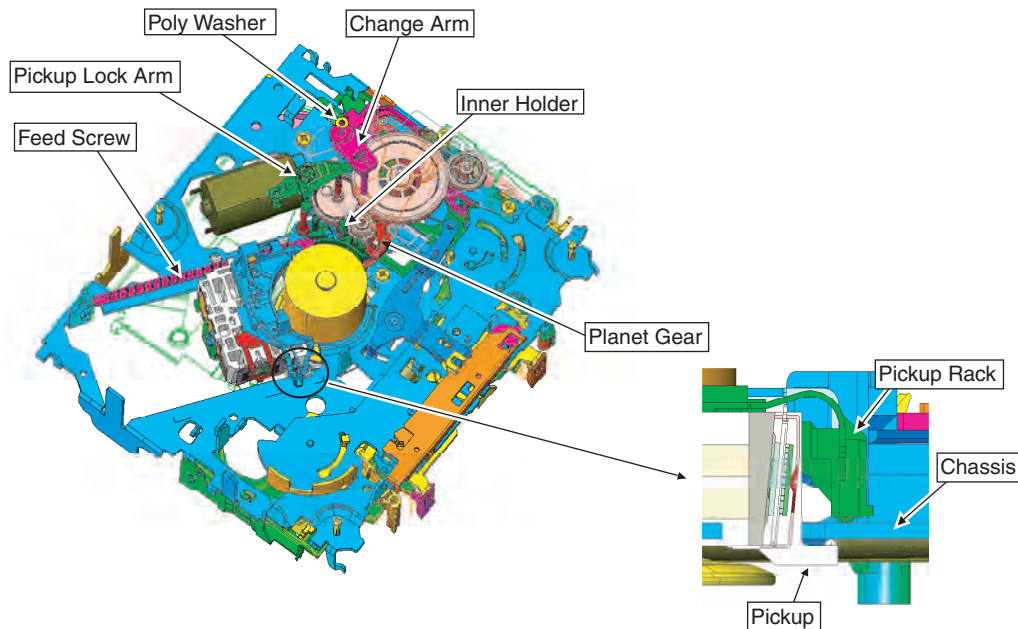


● How to remove the Pickup Unit

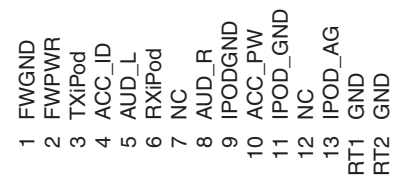
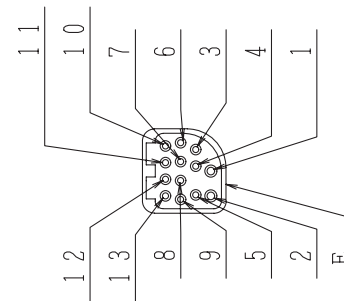
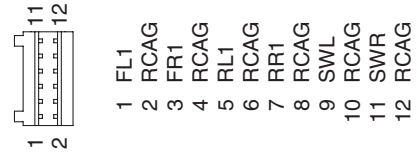
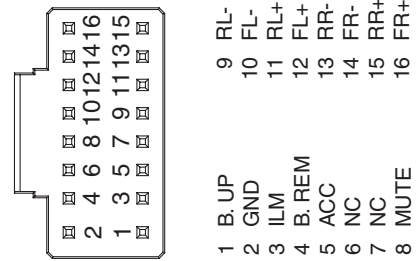
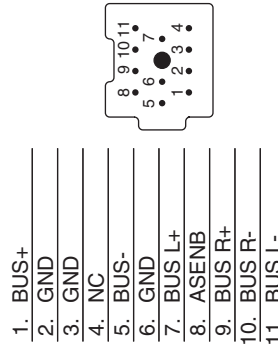
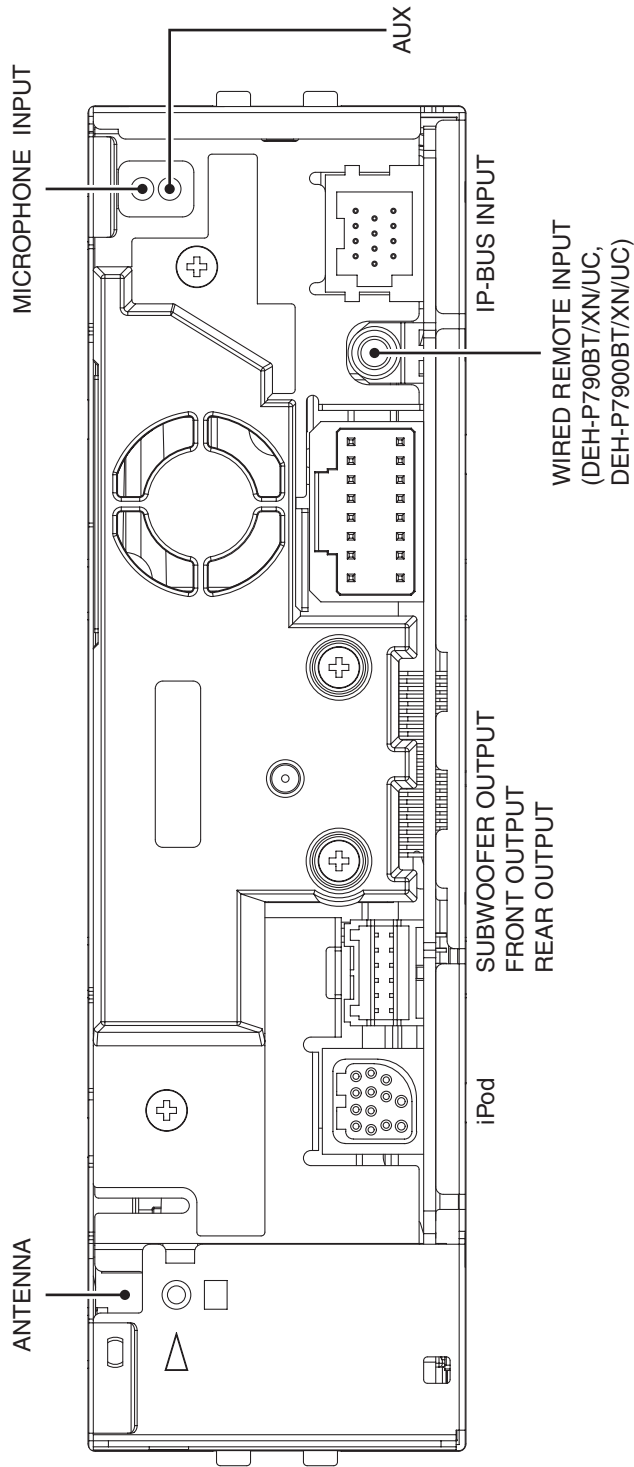
1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



7.1.2 CONNECTOR FUNCTION DESCRIPTION



7.2 IC

1	2	3	4
PAL007C TC4066BFT S99-50084 PML017A	PEG330A PEG303A PD8172A PD8171A	PE5547A TC74VHC02FTS1 TC7PAU04FU AN6123MS	AK2301A

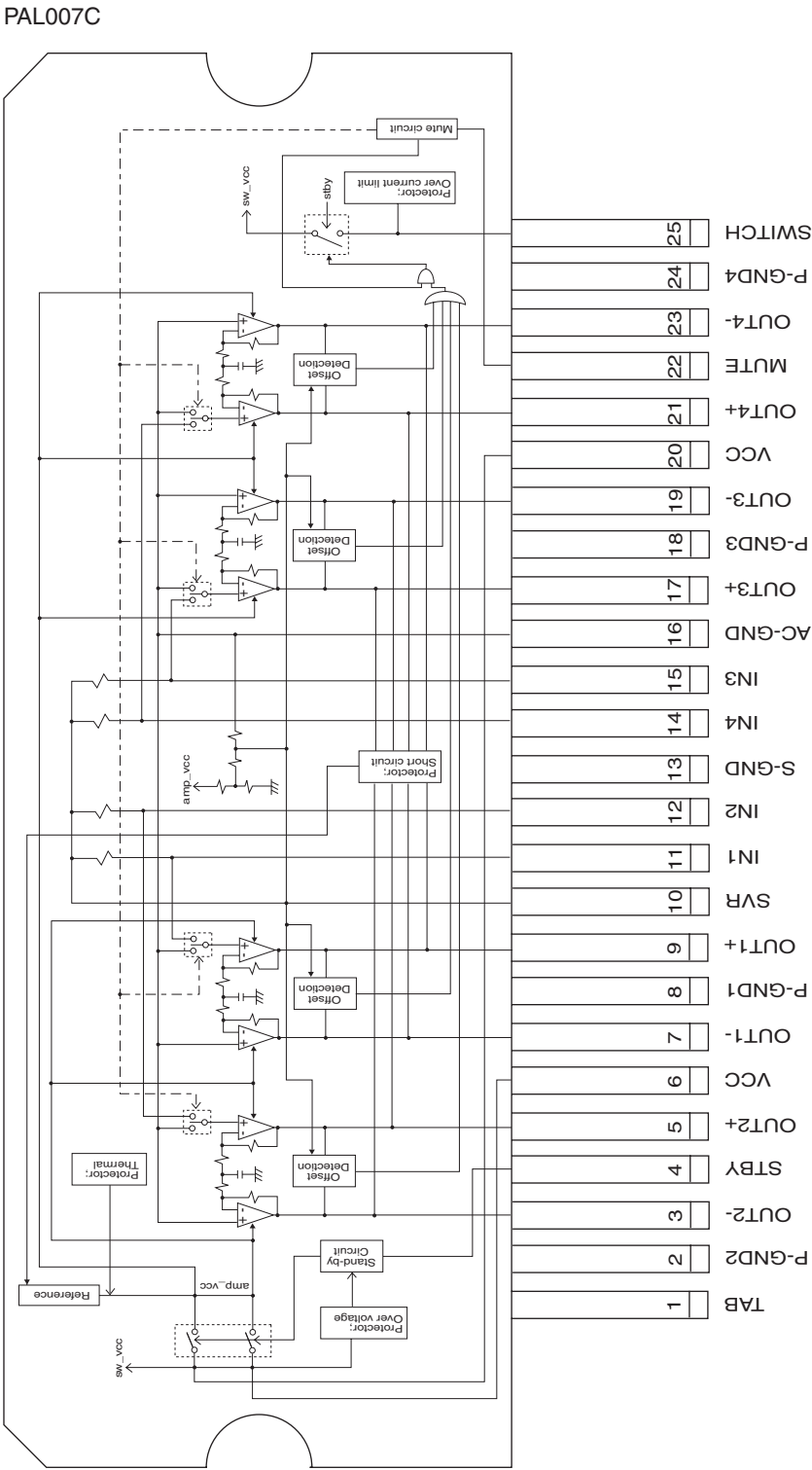
B

C

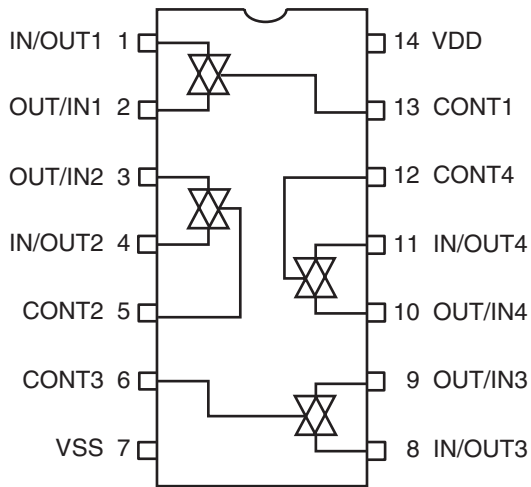
D

E

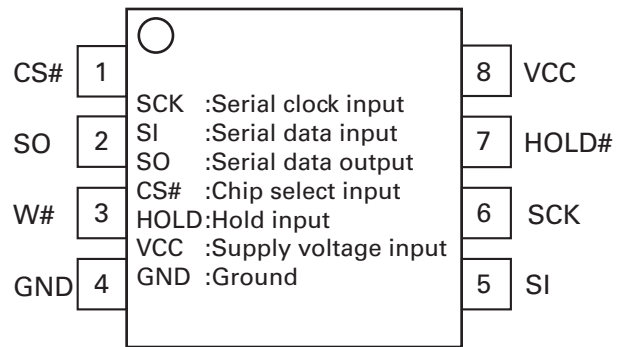
F



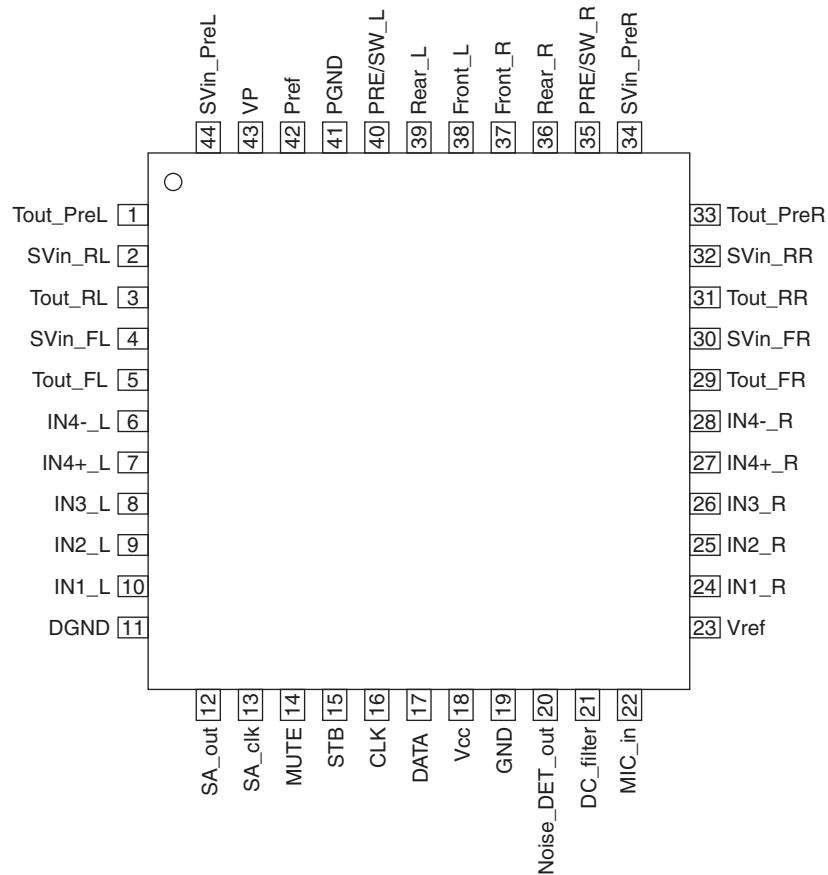
TC4066BFT



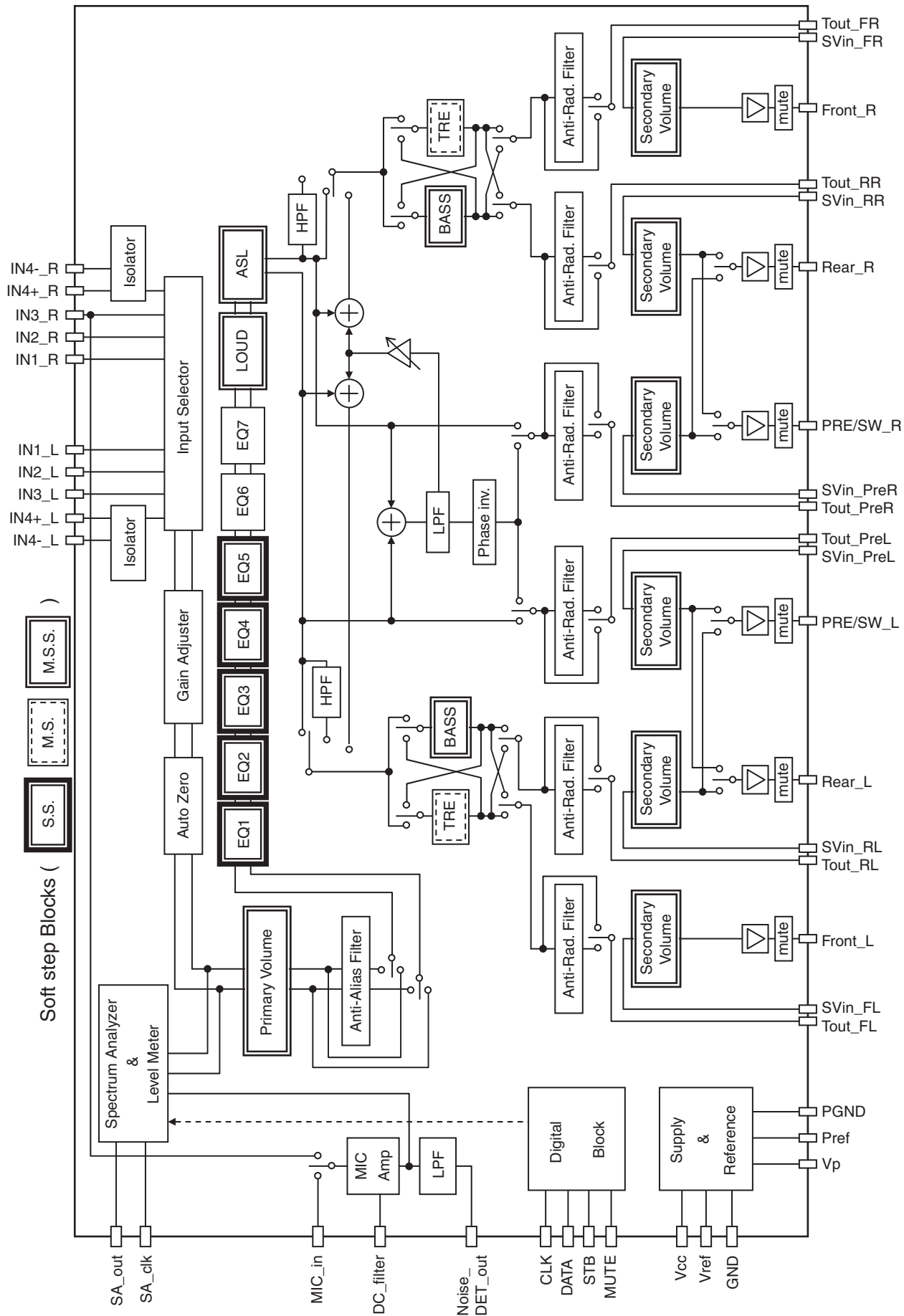
S99-50084



PML017A ● Pin Layout



Block Diagram



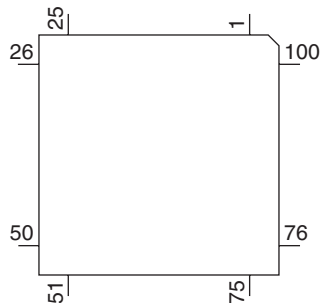
DEH-P790BT/XN/UC

● Pin Functions (PEG330A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	SYSPW	O	C	System power control output
2	KEYD/NC	I/		Wired remote control key input(UC)/Not used(ES)
3	MEMDO		C	External Memory : Data output
4	MEMDI			External Memory : Data input
5	MEMCK		C	External Memory : Clock output
6	BYTE	I		External data bus width change input
7	CNVSS	I		Processor mode change input
8	TELIN	I	C	TEL mute input
9	PPOWER	O	C	Power supply control output
10	RESET	I		Reset input
11	XOUT	O		Main clock output
12	VSS	I		GND
13	XIN	I		Main clock input
14	VCC1	I		Power supply input
15	NMI	I		NMI input
16,17	NU			Not used
18	MEMCS	O	C	External memory : Chip select output
19	MEMWP	O	C	External Memory : Write protect output
20	RXPOD			iPod data input
21	PID	O	C	Communication mode (UART) notification
22	TXPOD		C	iPod data output
23	BRST	O	C	P-BUS : Reset output
24	PEE2	O	C	Incoming BEEP sound output
25	BRXEN	I/O	C	P-BUS : Reception enable input/output
26	PEE	O	C	BEEP sound output
27	RX		N	IPBUS : Input
28	TX		N	IPBUS : Output
29	DPDT		C	OEL display microcomputer communication data output
30	KYDT			OEL display microcomputer communication data input
31	PSENSG	I		Connection sense input
32	BRSQ	I		P-BUS : Service request input
33	BTTX		C	BT driver : Data output
34	BTRX		C	BT driver : Data input
35	PSENS	I		Connection sense input
36	ROT0	I		Rotary encoder pulse input 0
37	ILMPW	O	C	Illumination power output
38	SWVDD	O	C	Display microcomputer chip enable output
39	ROT1	I		Rotary encoder pulse input 1
40	FLPILM	O	C	Flap illumination output
41	PCL	O	C	Output for clock adjustment
42	OELPW	O	C	OEL power supply control
43	EVOLSW3	O	C	EVOL : Source select switch 3
44,45	NC			Not used
46	TUNPDI	I		TUNER : Data input(PLL)
47	TUNPDO	O		TUNER : Data output(PLL)
48	TUNPCK	O	C	TUNER : Clock output(PLL)
49	FLPPW	O	C	Flap motor power supply output
50	FOPNSW	I	C	Flap open sense input
51	FCLSSW	I	C	Flap close sense input
52	FLPCLS	O	C	Flap close operation output
53	FLPOPEN	O	C	Flap open operation output
54	DACCS	O	C	DAC : Chip select output
55	DACDT	O	C	DAC : Data output
56	DACCK	O	C	DAC : Clock output
57	EMUTE	O	C	EVOL Mute

Pin No.	Pin Name	I/O	Format	Function and Operation
58	SACLK	O	C	Level indicator clock output
59	VDCONT	O	C	CD mechanism power supply output
60	VCC2	I		Power supply input
61	BTCTS	I		BT driver : CTS input
62	VSS	I		GND
63	BTTEST	O		BT driver : Output for RF test
64	BTPW	O		BT driver : Power supply output
65	BTRST	O		BT driver : Reset output
66	BTMUTE	O	C	BT driver : Mute output
67	DALMON	O	C	For consumption current reduction output
68	BTRTS	O	C	BT driver : RTS output
69	TUNPCE2	O	C	TUNER : Chip enable output(EEPROM)
70	TUNPCE1	O	C	TUNER : Chip enable output(PLL)
71	ROMCS	O	C	ROM correction chip select output
72	ASENS	I		ACC sense input
73	BSENS	I		Backup sense input
74	ROMCK/EVOLSW1	O	C	ROM correction clock output/EVOL : Source select switch 1
75	ROMDATA/EVOLSW2	I/O / O	C	ROM correction data input/output / EVOL : Source select switch 2
76	VST	O	C	EVOL : Strobe output
77	VDT	O	C	EVOL : Data output
78	VCK	O	C	EVOL : Clock output
79	IPPW	O	C	IPBUS : Driver power supply control
80	ASENBO	O	C	IPBUS : Slave ACC sense output
81	ISENS	I		Illumination sense
82,83	MODEL1,0	I		Model select input
84	NU			Not used
85	MUTE	O	C	System mute output
86	TESTIN	I		Test program input
87	PVSENS			Short circuit sense
88	NC			Not used
89	KEYAD/NC			Wired remote control AD input(UC)/Not used(ES)
90	SAOUT			Level indicator input
91	DSSENS			Detach sense input
92	CSRST	O	C	CD RESET output
93	NU			Not used
94	AVSS	I		Analog GND
95	SL			Signal level input(Field intensity)
96	VREF	I		Reference voltage input
97	AVCC	I		Analog power supply input
98	BSI/TESTDI			P-BUS : Input/Test program : Data input
99	BSO/TESTDO		C	P-BUS : Output/Test program : Data output
100	BSCK/TESTCLK		C	P-BUS : Clock output/Test program : Data clock

PEG330A



Format	Meaning
C	CMOS
N	Nch open drain

● Pin Functions (PEG303A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	BTLED	O	C	Blue tooth authentication LED
2	ROMDT	I/O	C	ROM correction data input/output
3	ROMCK	O	C	ROM correction clock output
4	REM	I		Remote control input
5	ROMCS	O	C	ROM correction chip select output
6	BYTE	I		External data bus width change input(VSS)
7	CNVSS	I		Processor mode change input
8,9	NC			Not used
10	RESET	I		Reset input
11	XOUT	O		Clock output
12	VSS1			GND
13	XIN	I		Clock input
14	VCC1			Power supply input
15	NMI	I		NMI input
16	NC			Not used
17	KS3	O	C	Key strobe 3(Not used)
18-20	KS2-0	I/O	C	Key strobe 2-0
21	NC			Not used
22	DSEL	O	C	OEL driver : Display data select
23	NC			Not used
24	CKD	O	C	OEL driver : Data transfer and driver clock frequency
25	NC			Not used
26	LS	O	C	OEL driver : Line sync signal
27	DPDT	I	N	System controller communication : Display data input
28	KYDT	O	N	System controller communication : Key data output
29-32	NC			Not used
33	OELD	O	C	OEL driver : Display data
34	NC			Not used
35	CLK0	I	C	OEL driver : Clock input for UART0
36	NC			Not used
37	RDY	I	C	RDY signal input
38	NC			Not used
39	HOLD	I	C	HOLD signal input
40-41	NC			Not used
42	RD	O	C	Image ROM : Read strobe
43-45	NC			Not used
46,47	CS2,1	O	C	Image ROM : Bank address 1,0
48	CS0	O	C	External extended ROM chip select(image ROM)
49	A19	O	C	Image ROM : Address bus 19 bit
50	A18	O	C	Non connection
51	A17	O	C	Image ROM : Address bus 17 bit
52	A16	O	C	Image ROM : Address bus 16 bit
53	A15	O	C	Image ROM : Address bus 15 bit
54	A14	O	C	Image ROM : Address bus 14 bit
55	A13	O	C	Image ROM : Address bus 13 bit
56	A12	O	C	Image ROM : Address bus 12 bit
57	A11	O	C	Image ROM : Address bus 11 bit
58	A10	O	C	Image ROM : Address bus 10 bit
59	A9	O	C	Image ROM : Address bus 9 bit
60	VCC2			Power supply input
61	A8	O	C	Image ROM : Address bus 8 bit
62	VSS2			GND
63	A7	O	C	Image ROM : Address bus 7 bit
64	A6	O	C	Image ROM : Address bus 6 bit
65	A5	O	C	Image ROM : Address bus 5 bit

A

B

C

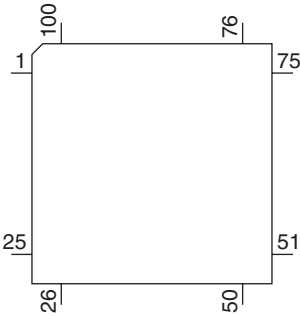
D

E

F

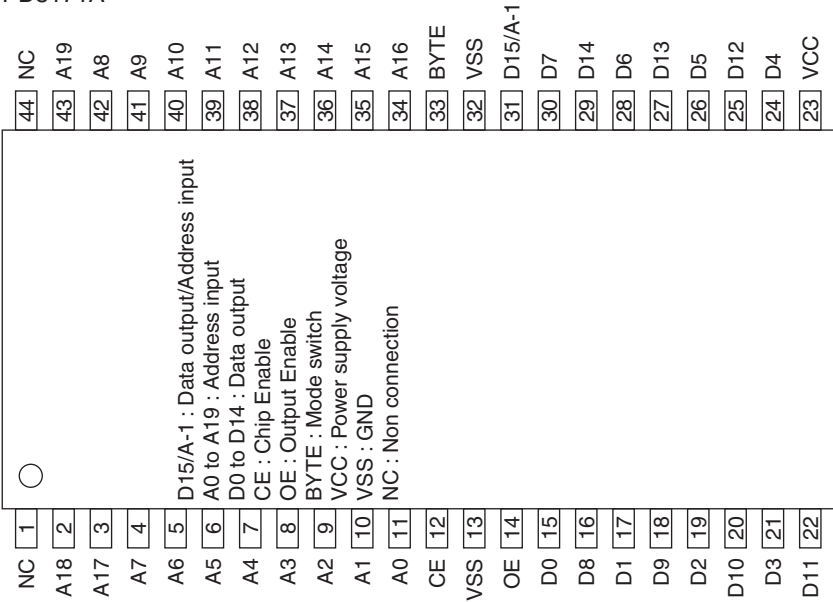
Pin No.	Pin Name	I/O	Format	Function and Operation
66	A4	O	C	Image ROM : Address bus 4 bit
67	A3	O	C	Image ROM : Address bus 3 bit
68	A2	O	C	Image ROM : Address bus 2 bit
69	A1	O	C	Image ROM : Address bus 1 bit
70	A0	O	C	Non connection
71	D15	I	C	Image ROM : Data bus 15 bit
72	D14	I	C	Image ROM : Data bus 14 bit
73	D13	I	C	Image ROM : Data bus 13 bit
74	D12	I	C	Image ROM : Data bus 12 bit
75	D11	I	C	Image ROM : Data bus 11 bit
76	D10	I	C	Image ROM : Data bus 10 bit
77	D9	I	C	Image ROM : Data bus 9 bit
78	D8	I	C	Image ROM : Data bus 8 bit
79	D7	I	C	Image ROM : Data bus 7 bit
80	D6	I	C	Image ROM : Data bus 6 bit
81	D5	I	C	Image ROM : Data bus 5 bit
82	D4	I	C	Image ROM : Data bus 4 bit
83	D3	I	C	Image ROM : Data bus 3 bit
84	D2	I	C	Image ROM : Data bus 2 bit
85	D1	I	C	Image ROM : Data bus 1 bit
86	D0	I	C	Image ROM : Data bus 0 bit
87	NC			Not used
88	JOYST	I	C	Rotary commander AD input terminal
89,90	NC			Not used
91	$\overline{\text{KD}}3$	O	C	Key data 3(Not used)
92,93	$\overline{\text{KD}}2, \overline{1}$	I	C	Key data 2,1
94	AVSS			Analog GND
95	$\overline{\text{KD}}0$	I	C	Key data 0
96	VREF	I		Reference voltage input
97	AVCC			Analog power supply input
98	$\overline{\text{DIM}}$	O	C	Terminal for Dimmer control
99,100	NC			Not used

PEG303A



Format	Meaning
C	CMOS
N	Nch open drain

PD8172A
PD8171A

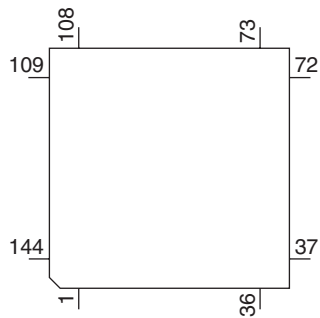


● Pin Functions (PE5547A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	ROMDATA	I/O	/C	E2PROM : Data input/output
2	ROMCK	O	C	E2PROM : Clock output
3	ROMCS	O	C	E2PROM : Chip select output
4	NC			Not used
5	LOEJ	O	C	LOAD/EJECT direction switching output
6	DSCSNS	I		Disc sense input
7	8SNS	I		8 cm disc detection input
8	12SNS	I		12 cm disc detection input
9	HOME	I		HOME SW sense input
10	TEMP			Temperature information sense input
11	VDSSENS			VD power supply short circuit/earth fault sense input
12	ADENA	O	C	A/D reference voltage supply control output
13	ADC.VDD			Power supply for A/D converter
14	ADC.GND			Ground for A/D converter
15	FLMD0	I		Flash writing control terminal
16	RESET	I		Internal microcomputer reset terminal
17	PULLDOWN	O	C	Pull-down
18	NC			Not used
19	TESTIN	I		Chip check, test program start-up input
20	NC			Not used
21	BSI	I	N	P-BUS : Serial data input
22	BSO	O	N	P-BUS : Serial data output
23	BSCK	I/O	N	P-BUS : Serial clock input/output
24	FTxD	O	N	Tx for flash rewriting
25	FRxD	I		Rx for flash rewriting
26	BRXEN	I/O	/C	P-BUS : Reception enable input/output
27	BSRQ	I/O	/C	P-BUS : Service request input
28	NC			Not used
29	FMODE	I		Flash self-rewriting mode start-up input
30	FLRQ	O	C	Flash self-rewriting reset voltage control
31	ROM	I		Open(EMPH)
32-36	NC			Not used
37	MCKRQ	O	N	CLOCK request
38	LRCKOK	O	N	LRCK reference enable
39	PUEN	O	C	Pickup hologram power supply control output
40	CD3VON	O	C	CD + 3.3 V power supply control output
41	CONT	O	C	Servo driver power supply control output
42	VDCONT	O	C	VD power supply control output
43	CLCONT	O	C	CRG/LOAD-EJECT switching control output
44	CDMUTE	O	C	CD mute control output
45	TEST	I		Test terminal
46	BRST	I		P-BUS : Communication reset input
47	REGS			Capacitor connection for standby
48	C.VDD			Power supply for internal microcomputer
49	C.GND			Ground for internal microcomputer
50	XTAL	I		Connected to the crystal oscillator
51	X.GND			Ground for the crystal oscillator
52	XTAL	O		Connected to the crystal oscillator
53	X.VDD			Power supply for the crystal oscillator
54	DA.VDD			Power supply for DAC
55	LOUT	O		Output of audio for the left channel
56	DA.GND			Ground for DAC
57	REGC			Connected to the capacitor for band gap
58	DA.GND			Ground for DAC
59	ROUT	O		Output of audio for the right channel

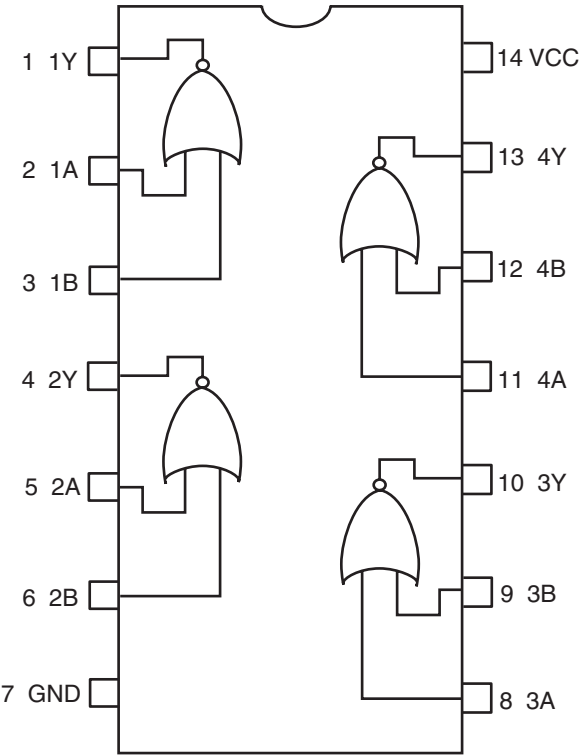
Pin No.	Pin Name	I/O	Format	Function and Operation
60	DA.VDD			Power supply for DAC
61	D.GND			Ground for digital circuits
62	D.VDD			Power supply for digital circuits
63	REG16			Capacitor connection for 1.6 V regulator
64	LRCK	O	C	3-wire audio LR clock output
65	SCKO	O	C	3-wire audio serial I/F clock output
66	DOUT	O	C	3-wire audio serial I/F data output
67-69	SVMON0-2	I/O	/C	Servo monitor input/output 0-2
70	SVMON3	I/O	/C	Servo monitor input/output 3(Ext MCK IN)
71	C33M	O	C	DRAM CLOCK
72	(RCS)	O	C	DRAM CS
73	(CKE)	O	C	DRAM CKE output
74	RAS	O	C	Output of DRAM RAS
75	CAS0(LDQM)	O	C	DRAM Lower CAS(LDQM) output
76	CAS1(UDQM)	O	C	DRAM Upper CAS(UDQM) output
77	WE	O	C	Output of DRAM WE
78	OE(CAS)	O	C	DRAM OE(CAS) output
79-94	RDB0-15	I/O	/C	Input/output of DRAM data 0-15
95	IO.GND			Ground for I/O terminal
96	IO.VDD			Power supply for I/O terminal
97-108	RA0-11	O	C	Output of DRAM address 0-11
109	FD	O	C	Output of focus drive PWM
110	TD	O	C	Output of tracking drive PWM
111	SD	O	C	Output of thread drive PWM
112	MD	O	C	Output of spindle drive PWM
113	EFM	O		Output of EFM signals
114	ASY	I		Asymmetry input
115	ATEST	O		Analog tests
116	A.VDD			Power supply for the analog system
117	A.GND			Ground for the analog system
118	RFI	I		Input of RF
119	AGCO	O		Output of RF
120	C3T			Connection to the capacitor for detecting 3T
121	AGCI	I		Input of AGC
122	RFO	O		Output of RF(AGC)
123,124	EQ2,1	I		Equalizer 2, 1
125	RF2-	I		Reversal input of RF2
126	RF-	I		Reversal input of RF
127	A.GND			Ground for the analog system
128	A.VDD			Power supply for the analog system
129	A	I		Input of A
130	B	I		Input of B
131	F	I		Input of F
132	E	I		Input of E
133	REFOUT	O		Output of reference voltage
134	FE-	I		Reversal input of FE
135	FEO	O		Output of FE
136	ADCIN	I		FE,TE A/D converter input
137	TE-	I		Reversal input of TE
138	TEO	O		Output of TE
139	TE2	O		TE2
140	TEC	I		TEC
141	LD	O		Output of LD
142	PD	I		Input of PD
143	AD.VDD			Power supply for servo ADC
144	AD.GND			Ground for servo ADC

PE5547A

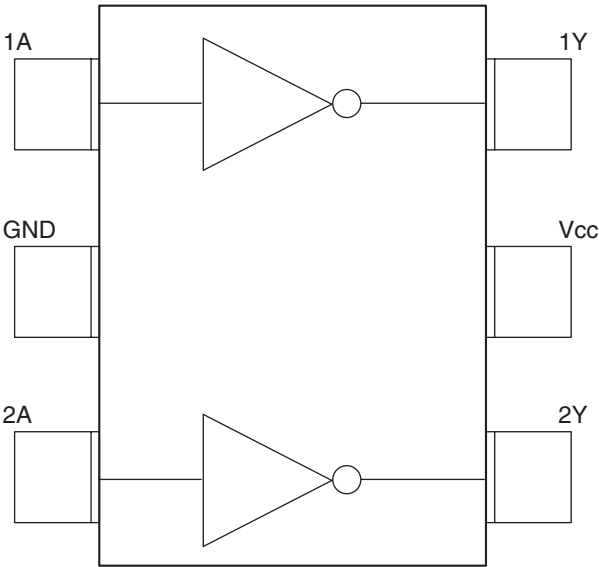


Format	Meaning
C	CMOS
N	Nch open drain

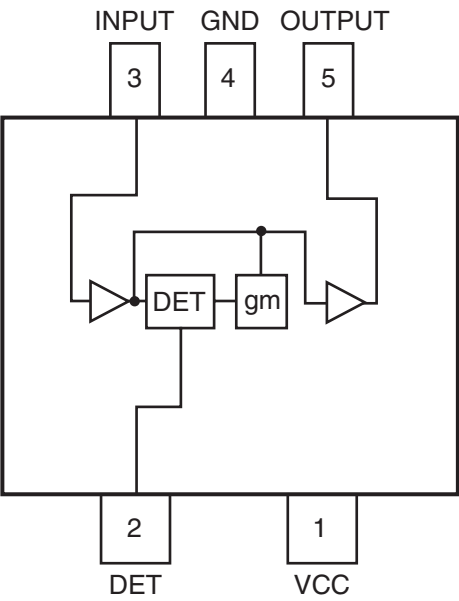
TC74VHC02FTS1



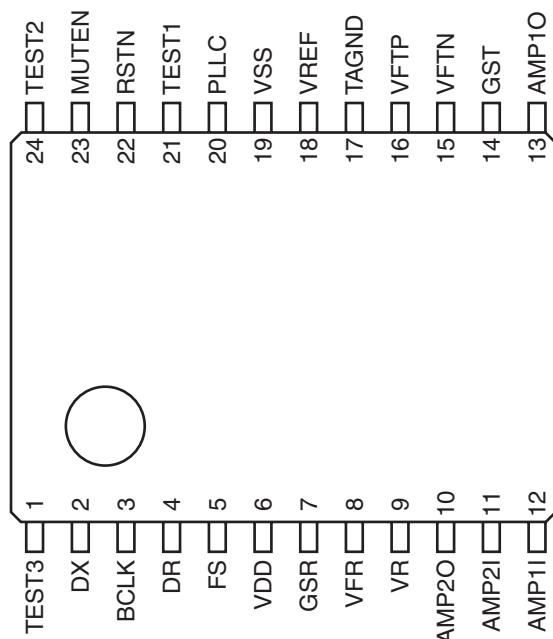
TC7PAU04FU



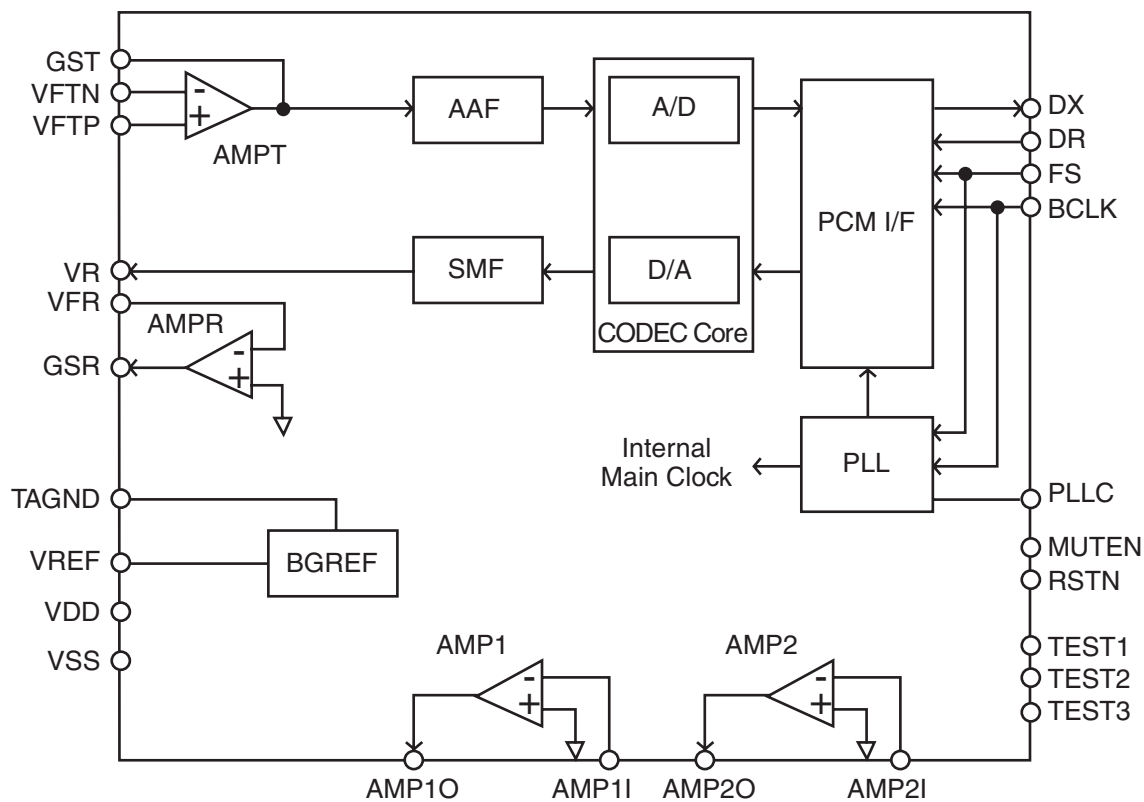
AN6123MS



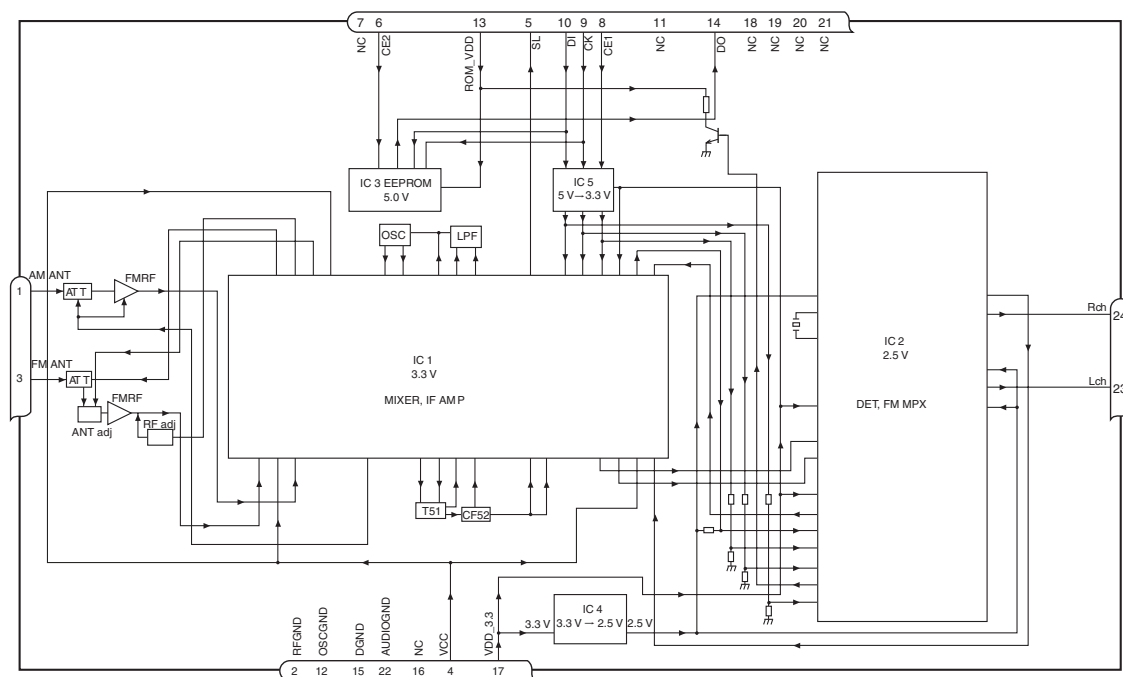
AK2301A ● Pin Layout



● Block Diagram



● FM/AM Tuner Unit



No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 μ H. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75 Ω Surge absorber (DSP-201M-S00B) is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4 V \pm 0.3 V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	NC		non connection	Not used
8	CE1	I	chip enable-1	Chip enable for AF•RF "High" active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	NC		non connection	Not used
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3 V \pm 0.2 V
18	NC		non connection	Not used
19	NC		non connection	Not used
20	NC		non connection	Not used
21	NC		non connection	Not used
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output	FM stereo "R-ch" signal output or AM audio output

7.3 OPERATIONAL FLOW CHART

Power ON

VCC1 = 5 V
Pin 14

$\overline{\text{BSENS}}$
Pin 73

$\overline{\text{BSENS}} = \text{L}$

$\overline{\text{ASENS}}$
Pin 72

$\overline{\text{ASENS}} = \text{L}$

DSENS
Pin 91

● $2 \text{ V} < \text{DSENS} < 4.5 \text{ V}$

$2 \text{ V} < \text{DSENS} < 4.5 \text{ V}$

ASENBO ← H
Pin 80

Starts communication with Grille microcomputer.

SWVDD ← H
Pin 38

500 ms

500 ms

Source keys
operative

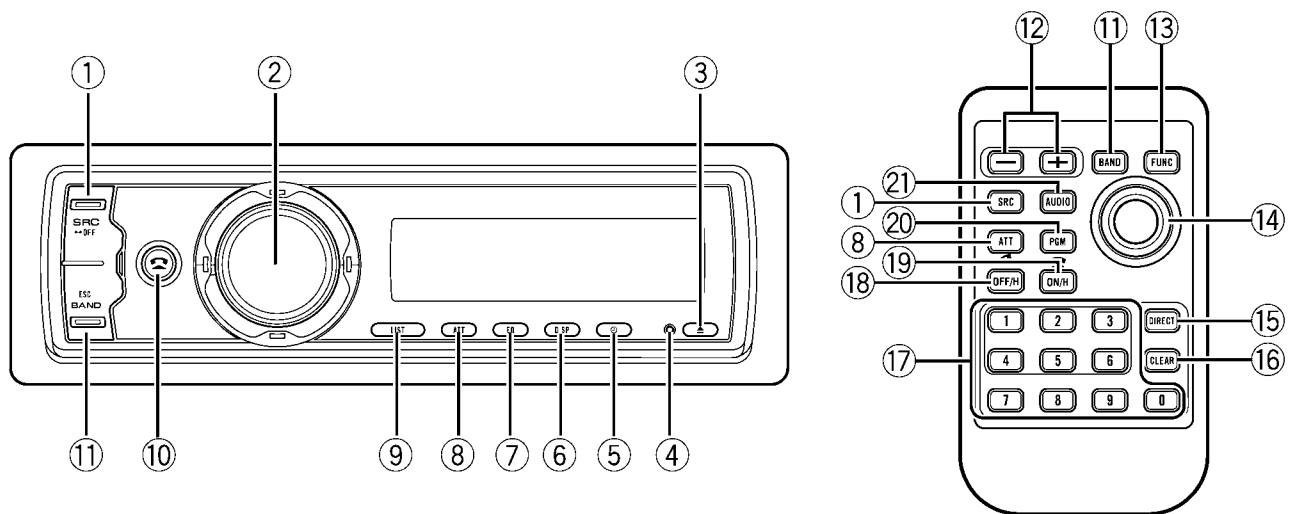
In case of the above signal, the communication
with Grille microcomputer may fail.
If the time interval is not 500 msec, the oscillator
may be defective.

Source ON

SYSPW ← H
Pin 1

Completes power-on operation.
(After that, proceed to each source operation.)

8. OPERATIONS



What's What

Head unit

① SOURCE button

This unit is turned on by selecting a source. Press to cycle through all the available sources.

② MULTI-CONTROL

Move to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions. Turn to increase or decrease the volume.

③ EJECT button

Press to eject a CD from your built-in CD player. Press and hold to open or close the front panel.

④ RESET button

Press to reset the microprocessor.

⑤ CLOCK button

Press to change to the clock display. Press and hold to change the channel select mode when XM tuner or SIRIUS tuner is selected as the source. (Only UC)

⑥ DISPLAY button

Press to select different displays.

⑦ EQ button

Press to select various equalizer curves.

⑧ ATT button

Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level.

⑨ LIST button

Press to display the disc title list, track title list, folder list, file list or preset channel list depending on the source.

⑩ PHONE button

Press to select the phone as the source. While operating a phone source, press to end a call, reject an incoming call or cancel making a call.

⑪ BAND button

Press to select among three FM bands and one AM band and to cancel the control mode of functions.

Remote control

Operation is the same as when using the buttons on the head unit.

⑫ VOLUME buttons

Press to increase or decrease the volume.

⑬ **FUNCTION button**

Press to select functions.

A

⑭ **Joystick**

Move to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.

Functions are the same as

MULTI-CONTROL except for volume control.

Press to display the disc title list, track title list, folder list, file list or preset channel list depending on the source.

B

⑮ **DIRECT button**

Press to directly select the desired track.

While operating the phone source, press to directly enter a phone number.

■

⑯ **CLEAR button**

Press to cancel the input number when **0** to **9** are used.

C

⑰ **0 to 9 buttons**

Press to directly select the desired track, preset tuning or disc. Buttons **1** to **6** can operate the preset tuning for the tuner or disc number search for the multi-CD player.

■

⑱ **OFF HOOK button**

Press to start talking on the phone while operating a phone source.

D

⑲ **ON HOOK button**

While operating the phone source, press to end a call or reject an incoming call.


■

⑳ **PGM button**

Press to operate the preprogrammed functions for each source.

E

㉑ **AUDIO button**

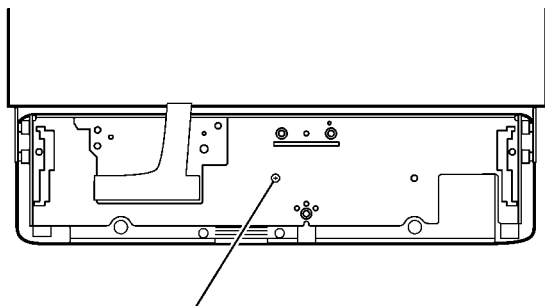
Press to select various sound quality controls. 

■

F

Fastening the front panel

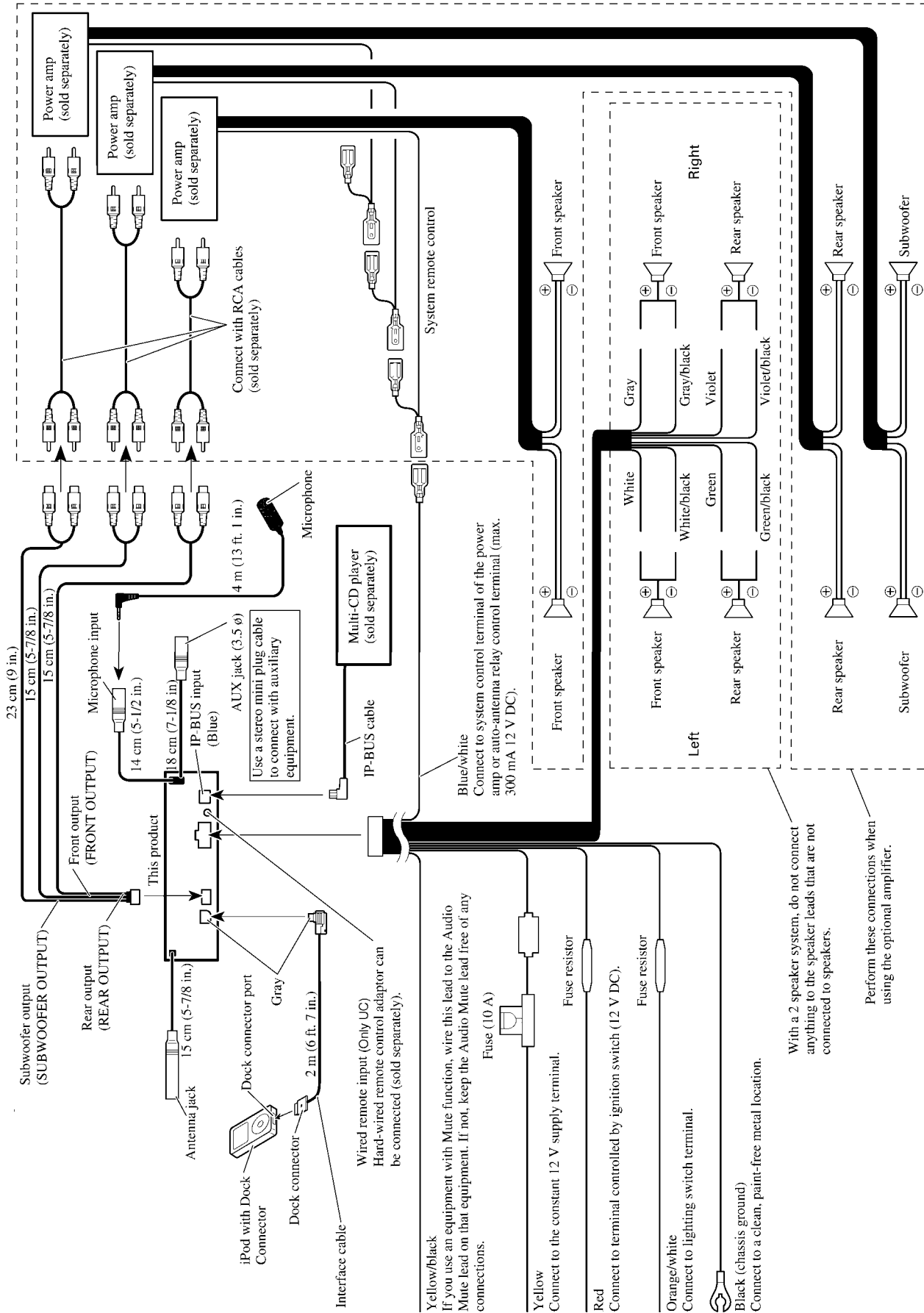
If you do not plan to detach the front panel, the front panel can be fastened with supplied screw.



Screw

(JPZ20P060FTB)(UC)

(XXX7019)(ES)



■

5

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● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)
	GGF1539	Removing the cord assy (BT antenna cable)

● Grease List

Name	Grease No.	Remarks
Grease	GEM1024	Drive Unit, CD Mechanism Module
Grease	GEM1045	CD Mechanism Module
Grease	GEM1069	Drive Unit



Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Portions to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008